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ABSTRACT

This is the final report of the General Learning Corporation's planning effort for the Fort Lincoln New Town school system. Designed as a "Comprehensive Plan", it summarizes the educational plans developed to date, and presents some new elements of planning while it serves to "tie together" all previous planning to provide the reader with a broad overview of the entire Plan. Certain elements of the Plan, principally facilities, budgeting and implementation, have not been addressed here, since they can be examined by referring to previous documents. The following topics are discussed in this document: education program; system organization; the master plan; and evaluation. (For related documents see ED 047 171 through ED 047 188.) (Author/LS)

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GENERAL LEARNING CORPORATION
EDUCATIONAL SERVICES DIVISION

AA 000 679

FORT LINCOLN NEW TOWN

COMPREHENSIVE PLAN

REPORT #5

MAY 11, 1970

GENERAL LEARNING CORPORATION
FORT LINCOLN NEW TOWN

COMPREHENSIVE PLAN

NEGOTIATED SERVICES
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REPORT #5

MAY 11, 1970

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FOREWORD

This document is the final report of the General Learning Corporation's planning effort for the Fort Lincoln New Town School system. As such, it has been designed as a "Comprehensive Plan," summarizing the educational plans developed to date, as well as presenting some new elements of planning. Certain matters such as system organization, facility and site selection, and capital and operating costs must be included here because they could be specified only after all other planning had been completed. Therefore, this document should serve to "tie together" all previous planning and provide the reader with a broad overview of the entire Plan.

Certain elements of the Plan, principally facilities, budgeting and implementation, have not been addressed here, since they can be examined by referring to previous documents. The reports submitted to date include the following:

- Educational Specifications
- Definition Summary
- Mid-Term Report (First Facility Report)
  - Education Program
  - Staff Development
  - Operations
  - Community Participation
  - Facilities
  - Funding
  - Implementation
- Secondary Program
- Final Comprehensive Plan

1. EDUCATION PROGRAM

Introduction

From Spring to Spring of 1969-70, the General Learning Corporation's Educational Services Division has been engaged in developing a series of plans for the Fort Lincoln New Town educational system, a system mandated by the Town's original planners to embody and constantly pursue excellence. The goals for the plan are simple and reasonable. First, it is hoped that the schools will enable each child to learn and to develop up to his full potential. This means that each child should be well grounded in the basic information skills. The second objective is to develop a school for the community -- a school that will be responsive to the community's desires and relevant to its needs. In addition, the first school should be able to achieve both of these goals while operating on a cost-per-pupil basis no higher than the projected D.C. average of $965 for 1969-70.

The unique nature of this plan derives in part from the unique nature of the Fort Lincoln community -- no two neighborhoods, after all, are precisely alike. However, the plan's more fundamental thrust is against the unhappy fact that few schools in any American community are meeting these two simple objectives. Schools do not properly educate many students, nor do they properly serve their communities because our educational system has become ponderous, rigid, and resistant to change, to the point where it can actually get in the way of learning.

Out of frustration, boredom, and anger, then, a growing army of students are "dropping out" of the formal educational process. And for every child who removes himself physically from the school environment, others are dropping out

symbolically -- contributing nothing but resentment, receiving nothing but diplomas.

Education, in short, has failed to keep pace with the times. Most public education is presently operating at far below its potential. It has become irrelevant to many of the interests and needs of the very children it is trying to educate. As a result, children are graduating totally unprepared for the competitive world. Many are deficient in even the most fundamental skills.

This summary of the various plans assumes that the reader wants to know what the two programs (elementary and secondary) will be like; what the major departures from tradition will be and why; and what the premier building blocks of the system will be. The first elementary school has been designed in greater detail than the secondary plan for the practical reason that the elementary school is likely to be opened five years in advance of the secondary school. In the elementary plans, an extremely high degree of specificity has been sought, down to the design of forms for student records and the assembly of 2,000 behavioral objectives describing the entire spectrum of elementary school performance. The secondary plan is not nearly so precise, nor is it meant to be. Exactly because that many objectives are not yet availabe; because instructional techniques and pedagogical fashions change like hemlines and haircuts; because the definition of such words as "relevant" and "responsive" may change radically between now and 1975 or so, the secondary plans are more suggestive than prescriptive.

A System that is "Open"

These days particularly, the world seems to be full of words and phrases -- and acronyms -- that are especially evocative. One such word is "open"

-- as opposed to closed in the sense of being repressive. We hear regularly of the society which is open...to change and suggestion. Again, the person with an open mind is willing to listen to all viewpoints and consider all alternatives. By contrast, the word "closed" is left for the final, the irrevocable, and the inflexible. Someone with a closed mind is considered to be a dangerous fogy (and might be) who needs the distinction between thinking and feeling more carefully explained. The closed system is one in which further exploration is irrelevant if not impossible; the closed case is one in which further argument is fruitless; the closed session is one spectators can't see. Everything about "closed" suggests either physical or mental restrictions.

It is just this connotation that Fort Lincoln's "open" plan hopes to reverse. There are no intellectual restrictions; discipline is not taught (the students learn it as part of the larger concept of responsibility for their own programs) so it doesn't operate in a restrictive manner; the space is open like a loft.

Some of the specific characteristics of this plan are that it is open to:

- Experimentation and change
- Feedback and modification by the community, staff members, and students
- A wide range of intellectual and artistic endeavors by students
- Learning with traditional and new media
- Participation in decision making by all affected people
- Career opportunities for all staff members
- Various curriculum choices by students, staff members, and parents.
- Community use of the facilities.

Although the ramifications of the word "open" itself probably suggest the kinds of reasons, some of the specific points of the rationale for adopting such a plan might be instructive:

- The diversity of the staff members, materials, facilities, and curricula will make the system most responsive to the needs, interests, and abilities of the students, parents, and staff members.
- The distribution of decision-making power to parents and students will increase involvement, responsibility, and commitment.
- Greater diversity of adult models will be provided by the staff members since they will <u>all</u> teach (including those with administrative functions).
- Each student's education program will strike a balance between:
  - systematic activities designed to ensure coverage of certain knowledge and abilities, and
  - a wide range of opportunities to learn through the intensive study of areas of special interest.
- The relevance of school to life will be increased by the interaction of students with the people, programs, and institutions of the community.
- The administrative organization will encourage continuing modification and refinement of the school; no "institutionalization" will operate to lock in undesirable features.

Part of the "openness" of the plan is reflected in the large number of options available to students, their parents, and their teachers. A principle, called "negotiation and transaction", is critically important to the design of the Fort Lincoln education plans, both elementary and secondary. It underlies all relations between students and students, teachers and students, teachers and teachers, etc., because it stands for the basic democracy of the school; it is a method of ensuring and reinforcing individualization. Students daily are negotiating with all the surrounding elements as they pursue their objectives. The result of their negotiations is some sort of transaction -- of time, materials, etc. This is as true for a student who is trying to get himself some special help at an odd time (for which he may "pay" by running an errand, etc.) as it is for the teacher who wants her schedule covered by another teacher so she can organize a special activity.

The student is thus an active force in the conduct of his own education as the teacher is an active force in shaping it. This is a reflection (more so in the secondary plan) of growing student maturity and at the same time it is a response to the Country's continuing urbanization. In fact, a key thrust of this plan is the stance it assumes relative to the educational possibilities of highly concentrated urban areas. Up until very recently, the urban ghetto -- and <u>any</u> highly urbanized area is, in a sense, a ghetto regardless of the socio-economic level of its inhabitants -- has been a symbol of failure and blight from which education has shrunk. Perhaps this is why so many urban youths feel more at home on the street than in school, a fact accentuated by the many "gothic fortress" school buildings in our oldest and worst ghetto areas. By contrast, the Fort Lincoln plan is specifically designed to incorporate the elements of heavy concentration, a large street society, and great human

and occupational diversity into an education program that promotes self-development (instead of assimilation into the mass) and turns youth "on" to the richness of the neighborhood (rather than "off" to the squalor of the block). In the urban areas of the future, it will be especially important for students to be able to negotiate and transact. They must be able to form a clear idea of their own goals and what compromises and sacrifices they may expect or permit themselves to make in trying to achieve them. They must also know where in the community are the important resources for their needs and how to deal with the adults they will confront there.

Though most of the components of this open plan are being used successfully -- in at least a few schools -- the total plan is unique. It attempts to define a school appropriate for the 1970's, with changes in four basic areas:

- In the system of instruction as it concerns the student
- In the system of staffing and administration as it concerns the instructional staff
- In the instructional materials
- In the plant, equipment, and supplies.

Elementary Program

The Heart of the Concept: Stages

At the heart of the planned Fort Lincoln instructional system at the elementary level are the "stages" which are based on the stages of growth of the individual. This is where the instruction, the main business of the school, is carried on. All of the school's other elements -- administration, maintenance, and so forth -- function primarily in support of the stages.

The success of the stage depends on the success of two components:

- Individualized instruction
- A nongraded placement system

Individualized instruction permits children to get their basic, factual information from filmstrips, tapes, other self-instructional materials, etc., freeing the teachers to guide, answer questions, resolve difficulties, and provide motivation. Paradoxically, the team teacher working in a stage is able to devote more time to each child than a classroom teacher using traditional methods. The stage provides for increased efficiency by permitting each member of the instructional team to concentrate on her strengths and to minimize her activity in areas in which she is ineffective.

In the nongraded system of pupil placement, each child works at his own pace, a pace which is mapped out in conference by the child himself, his parents, and his teacher/advisor. Depending on their aptitudes, most children will proceed at different rates in the different subject areas. Rather than moving through a syllabus thence from grade to grade, the child works toward single, concrete, measurable objectives. He may reach some of these in a few days; others will take him months.

This system permits the school to group children in stages according to such factors as age, size, and emotional maturity, rather than simply according to scholastic achievement. A child will normally stay in each stage for several years. Stage I -- preschool and kindergarten -- will consist of children from about 3 to 5 years old. Children from ages 5 to 7 will be in Stage II; 7 to 9 in Stage III; and 9 to 12 in Stage IV. (At the Fort Lincoln First Facility, Stages III and IV will occupy the same facility). Students are not restricted to their own stage. In fact, since they are working at their own pace, it is quite likely that they will be faster in some areas and

slower in others than their stage peers. These differences may take them to other stages in search of materials or instruction.

One clear assumption of the whole plan is that the most relevant education is the one that best prepares the student to function in society. Thus, it insists that every child who goes through the Fort Lincoln elementary school will have a solid grounding in the skills relative to the acquiring of information -- reading; the processing of information - logical thought, mathematics, and problem solving; and the dissemination of information - writing and expression. Since the plan also intends to be relevant to the population diversity of the proposed new town, the educational experiences in general and the curricula in particular will be attuned to the cultural background of each individual student. The system's flexibility is designed to eliminate the tragic "lost year" which children in even the best traditional schools almost invariably encounter -- the year spent in the classroom on an incompetent or unsympathetic teacher. In a traditional school, instructional needs must adjust to the specifications of the system. In the Fort Lincoln plan, the reverse is true. Materials and supplies -- even the school building -- can be changed as the need arises! New technology and concepts can be incorporated with a minimum of delay. The options of the child are broadened and are kept broad as he continues his educational experience.

The flexible stage also permits the physical elements of the school to mold themselves to instructional needs. Carpeting and sound-absorbent overhead material keep the open environment quiet. However, if a distraction problem does develop, demountable walls can be installed. The walls have higher soundproofing qualities than concrete blocks. Because of their steel facing, art, photos, and the like can easily be attached to them with magnets. Each of the study alcoves around

a stage area has a vinyl curtain, which students or teachers may pull completely or partly closed, as they think necessary.

One other final area of flexibility is in scheduling. The use of individualized instruction will permit the Fort Lincoln elementary school to remain open from 7:00 a.m. to 7:00 p.m. each day for instructional activities, six days a week, year round. (The community will be able to use the facilities after 7 p.m. if they will pay the maintenance and security costs.) A student can attend any six hours on any five days and can take his two months of vacation at his family's convenience. Staff schedules will adjust to fit those of the students.

Objectives: Required and Optional

When a child comes into a stage, he will be tested and "observed" by a teacher assigned to him as an advisor. On the basis of this testing and observation, she will write out a diagnosis of his capabilities, needs, strengths, and shortcomings. She will then prescribe instructional materials on the basis of her diagnosis. However, all final decisions regarding instruction, pace, and scheduling will be made in conference with the advisor, the student, and especially in the early stages, with the student's parents. A number of arguments favor this sharing of decision making with students and their parents. The most obvious is that it is only elemental democracy to permit individuals some voice in their own destinies. Another argument is that it serves as an incentive: a child who sets his own goals is likely to be more highly motivated in going after them. Said another way: a child's interest in his education is liable to be healthier if he has a proprietary stake in it! (In the later school years, it functions as dropout insurance.) Finally it works. Sixth-graders in the Downey

School in Harrisburg, Pennsylvania, for instance, are now writing all their own prescriptions.

Much of the substance of the parent/teacher/student conference will concern "objectives." These are statements of behavior the student should be able to exhibit when he has "learned" a certain amount of material.

An objective in mathematics, for example, might be "Count aloud or in writing to one million from any starting point." This does not mean that the child will have to enunciate, or write, every digit between one and one million. It does mean that the stage instructional team must be convinced that he can.

This is a required objective. A child must master this behavior if he is to progress toward the basic knowledge and skills which will permit him to function in society. In the Fort Lincoln elementary school, there will be required objectives in mathematics, reading, communication skills, and health. At the same time, the child will be able to select from an array of optional objectives. More specifically, different stages must select a set number of optional objectives and then complete a given percentage of those selected. Optional objectives cover such subjects as art and humanities, social studies, science, and physical education.

As the child works toward his various objectives, both he and the instructional staff will make heavy use of testing in order to chart his progress, spot problem areas, and ensure against his "learning" things he already knows. These tests are part of an ongoing process; they are "prognostic." Their function is to provide information that will facilitate instruction. They will have no bearing on "grades" or on the

student's progress through the school. As a result, they should not pose a threat to the student and should not become associated with anxiety or unpleasantness. There will, of course, be no reason for the student to cheat. In the higher stages, in fact, students will grade most of their tests themselves. Otherwise, the tests will be graded by paraprofessional teaching aides. The function of these aides will be to participate in the operation of the stage and to relieve the teachers of most paperwork, record-keeping, and other nonteaching duties.

The Fort Lincoln plan also will make some use of student tutors in the stages. Tutors will be paid an hourly fee and will work only with the consent of the student being tutored. This system is being used in Pacoima, California, and in some inner-city schools in Miami. In both areas, tutors and tutored alike improved their achievement levels, with the tutors gaining increased self-confidence and motivation from the experience. There was also a lessening of disruptive behavior on the part of students involved in the programs.

The assembling of the objectives was a major part of General Learning's effort, since no entire collection of such objectives for an elementary program exists elsewhere. During the entire year of planning, an intense search and analysis of existing objectives was proceeding. For areas where no suitable objectives existed, General Learning consultants, together with appropriate subject-matter experts, wrote the objectives themselves.

The objectives are of two kinds, intermediate and terminal, and they are the major component of a child's prescription. To indicate how broad the range

of optional objectives is, the four compulsory areas of study -- reading, mathematics, health, and communications -- comprise only about 100 terminal objectives out of a total of 2,000.

The optional objectives are also available in four major areas:

- Arts and humanities (including visual arts, such as photography, etc.; music; dance; drama; literature, architecture; and urban planning)
- Social studies (including history, geography, interpersonal relations, economics, government and politics, and anthropology)
- Science (of all kinds)
- Physical education

New curricula, based on performance objectives, are now being developed more widely than ever before. In some cases, General Learning planners have adapted the objectives of a commercial package without the accompanying materials and activities. In other cases, GLC has recommended that a given curriculum be "bought" for use in Fort Lincoln.

For Stage I, the preschool, Learning Research Associates' "Discovery" objectives have been adopted. The major thrust of Stage I is concept formation with mastery of 500 concepts as the minimum acceptable standard. In Stage II, where reading is of critical importance, GLC has suggested that Fort Lincoln adopt the Michigan Language Program, which takes children through "decoding." Essentially, at the end of this Stage, every child will be able to read. Another commercial curri-

culum GLC has recommended is the American Association for the Advancement of Science's "Science -- A Process Approach." Other objectives were adopted from the President's Council on Physical Fitness and the Research for Better Schools' IPI series in reading and mathematics.

Although General Learning has assembled this core of objectives, the process will not stop here. Teachers in the school will learn the techniques of preparing such objectives and they will be adding new curricula as well as updating the old. For these first 2,000 objectives, GLC has prepared a corresponding list of activities especially designed to help children achieve the objectives assigned to them. These activities are cross-referenced by number with the objectives. Writing objectives and inventing corresponding activities is, however, only one of the unique facets of the teacher's role at Fort Lincoln.

The Role of the Teacher

One of the Fort Lincoln teacher's first duties will be to diagnose the instructional needs of her students and to prescribe the materials most likely to satisfy them. As a result, she must have good powers of observation, good insight about and interest in children, and she must be adept in using many instructional methods. She must know both the children and the materials.

Second, she will serve as a resource for information. She must have solid subject-matter knowledge, probably in several different areas. Third, she should serve as a motivating force. Unfortunately, Fort Lincoln cannot anticipate a complete roster of inspirational teachers, but a program that frees the teaching staff

from much of the traditional tedium and frustration will uncover some sparks that would otherwise remain hidden. Lastly, the Fort Lincoln teacher will be a pioneer. It will be part of her duty to share her unique experiences and knowledge by incorporating these in new materials and curricula.

The Fort Lincoln teacher has no boss. Or depending on how and when you look at it, she may have several hundred bosses. What she is, is a team member -- a member of the stage team responsible for all the instructional functions of the stage, and a member of the school team responsible for the functions of the school as they are directed toward both the students and the community. By way of illustration, compare the lot of a teacher in a traditional school with that of a teacher in the Fort Lincoln school. In a traditional school, a teacher is assigned perhaps 30 students to "handle." Most of the classroom dialogue proceeds between an individual and a group. Even for the dedicated teacher, it is impossible to give adequate individual instruction to more than a handful of students who might interest or appeal to her. Moreover, she has only limited opportunity to put her own mark on what she teaches. The school system hands her a syllabus which she must get through by the end of the semester. It tells her what texts to use, when to test, when to issue grades. By slightly more subtle means, it even lets her know what attitudes to impart and what values to uphold. In short, the system has depersonalized the teacher by curtailing her opportunity to give the children herself. It has reduced her to a link, really only a courier, to the students of the impersonal wisdom of the Board of Education.

The fact is that the traditional teacher has little real responsibility for what, and even whether, her charges learn. More important is her ability to main-

tain control. Because of all this, the parent whose child is not learning is likely to have great difficulty in finding where, in the system, the problem lies, in assigning responsibility, and in getting a solution developed. The system becomes a murky shield behind which the incompetent teacher or administrator can hide.

At Fort Lincoln, most responsibility resides in the stage. Though most of the instructional materials used in the stage are produced elsewhere, it is the responsibility of the teaching staff to select materials that are appropriate and to utilize these materials effectively. In fact, teachers (and students) are allotted a given amount of money to spend on materials and services for the stage. Teachers (and students) might be counseled to spend the money in certain ways, but the final decision is theirs.

Each teacher in the stage has responsibility for all of the children in the stage, but no teacher has sole responsibility for any child. A child's advisor has more contact with him than the other teachers in the stage, but even in her advisory role she is expected to consult with her colleagues. This is especially true if she is having difficulties. Occasions will no doubt arise when an advisor may decide that a child would be better served if another teacher advised him. By the same token a child or a parent could also request a change in advisors. There is a possibility, of course, that a teacher could use this system of shared responsibility as a cop-out, just as a classroom teacher can cop out in the bureaucracy. However, it would be difficult for her to do so without it coming to the attention of a great many people.

The pressure from her fellow teachers alone would be a potent factor in keeping her both responsible and productive. In addition, constant interaction with other teachers

helps a teacher grow. She is able to broaden and sharpen her techniques, and is exposed to standards against which she can measure her own performance.

The Administrative Organization

The Fort Lincoln staff will be divided into four basic teams, the three instructional teams in the stages plus a support team consisting of administrative and maintenance personnel. Like all teams, these will require leadership. To ensure that they function effectively, they are structured so as to obtain the most effective leadership possible. This will mean violating some traditions.

Traditional schools operate on an assigned hierarchy. There is a Principal, who is the chief administrative officer, and under him an Assistant Principal, whose normal function is to execute the Principal's decisions. If the school is big enough to have departments, then there will be a certain informal hierarchy among teachers. At the bottom are the nonprofessional workers -- aides, office and kitchen help, and so forth. The virtue of this is that everyone knows where he stands. The drawbacks are several. For one thing, the same leaders will be leading in all endeavors -- those in which they are capable and those in which they are not. The rigidity is complete. Even more serious, the leadership is assigned from outside the school and often for reasons such as seniority or academic attainment, that are totally unrelated to leadership capability. Thus, assigned leadership is often inadequate and frequently becomes the cause of intense division within the school.

On the other hand, idea-oriented industries and research companies like the RAND Corporation are establishing multidisciplinary teams with team responsibility for specific, important jobs, but with no assigned leadership.

At Fort Lincoln, everybody will start out equal. There will be no principal. Every member of the administration will have his carefully worked out functions, but none of them will be to boss the teachers. Each stage will be largely free to make its own rules and establish its own procedures. The primary function of the administration will be to provide support for the stages. The master teacher in each stage will function as a kind of elder statewoman, serving as convening chairwoman in the stage's early phase and providing mediation services as necessary. Her position will carry no assigned authority. When leadership is needed, it will develop automatically. One individual may be particularly competent in scheduling. She would probably take charge of work in this area in the stage, and the others would be naturally inclined to follow her lead. Working hierarchies would fall into place for both regular functions and special projects. Leaders could be master teachers or associate teachers. They could also be teacher interns, externs, aides, or even, conceivably, students!

The main thing is that there will not be one artificial, externally imposed hierarchy. The members of each team can continuously arrange and rearrange themselves into several simultaneous natural hierarchies, choosing the most competent leadership at the head of each.

In addition to localizing responsibility and providing for more effective leadership, the use of working teams employing emergent leadership should contribute an additional responsiveness and flexibility to the school program. Both help confine the decision-making process to the stage. Teachers, students, and parents will select the students' objectives and map out their schedules and work plans. Teachers,

aides, and students will select materials, determine the physical layout of the stage structure, and plan projects. The system can also change and evolve as appropriate, and it will ensure that administrative and maintenance staff members are responsive to instructional needs.

Each of the instructional teams will consist of an average of six teachers and four aides. Although there will be several different titles for the teachers, depending on their academic attainments and length of teaching experience, the assigned roles of all teachers will be identical. Aides, however, will function in support roles and will not be expected to provide direct instruction to the students, though they will have a voice equal to the teachers in the establishment and implementation of stage procedures.

The Administrative Coordinator will have primary responsibility for the support of the stages. He must see that all records, both in the stages and the central offices, are in order; that the stages get the requisitioned materials; and that the custodial and other support staffs function as required. The Office Manager will be responsible for the smooth operation of the central office and for answering phones, handling incoming mail, maintaining financial records, supplying data to the school system, signing purchase orders, and expediting requests for information.

Other support functions will fall to the following offices. The Staff Development Coordinator will be the chief resource person in conduct, organization, and evaluating of all internal training efforts, and in all matters relating to group interactions. He will also be the school recruiter. The Resource Coordinator will be the school's chief liaison man to the community, the school system, and the outside world in general. The Media Coordinator will be a kind of super librarian.

Coordination between the teams will be handled by an operating team composed of representatives from each of the three stages plus the Administrative Coordinator, the Staff Coordinator, the Media Coordinator, and the Resource Coordinator plus a student representative chosen from the third or fourth stage. The operating team will establish and implement procedures relative to the interaction of the school's parts. Its particular concern will be the means by which administrative and maintenance services are brought to the stages.

The entire Fort Lincoln elementary school process will be monitored by the Director of the Special Projects Division of the D. C. School System. He will represent the interests of the D. C. Board of Education and will be able to intervene at any time in the operation of the school. The Special Projects Division and General Learning Corporation will conduct an extensive recruiting drive in order to ensure the best possible staff for the Fort Lincoln elementary school. Both the teaching and administrative responsibility will require considerably more work and dedication than in traditional schools. Thus, applicants are likely to be dedicated and adventuresome. Many of them are also likely to be young, idealistic, and perhaps rebellious. Part of the staffing job will be to make sure that growth and enthusiasm are balanced with practical experience.

In order to ensure a wide range of experience in the teaching and administrative staff, the number of professionals hired from the D. C. School System should be no more than 50 percent of the total. Other staff sources will include other school systems, the Northeast community, the colleges and universities, and such other sources as the business community, the Peace Corps, and the Teacher Corps.

Of course, practically any teacher first coming to Fort Lincoln will have a great deal to learn. As a result, a two-month break-in period has been scheduled for staff development. This period will take place the summer before the school opens. This will enable the staff members to become familiar with individualized instruction methods and self-instructional materials and to get enough materials ordered for the school's opening. It will also let them familiarize themselves with the open stage, demountable walls, and the hardware. In addition, the staff and the community will have an opportunity to become familiar with each other and allow natural leadership to emerge. The staff development period will culminate with a dry run, during which a selected group of students will come to school to receive instruction.

As mentioned earlier, the school will remain open year round, six days a week, 12 hours a day. All staff members will work on a year-round basis, with vacations of one month. Students will have two-month vacations, which they will be able to take whenever they please, providing only that they give the school adequate notice. Furthermore, a student may split his vacation time if he desires. Staff scheduling, both as regards to working schedules and vacations will depend on the schedules of the students. However, each teacher will be at the school six hours a day, five days a week.

...That is Relevant to the Community's Needs

Up to this point we have dealt primarily with the first of our two prime objectives: to provide a mechanism for educating children well. Our second objective is to build a school that is relevant to the community's needs and responsive to its desires. The goal here is to build a school that is, as completely as possible, a

community school. This does not simply mean that the school will serve the community. The community will also serve the school.

Perhaps the most vital service the school can render the community is to educate its children well, to prepare them either for college or to hold a productive, dignified job, and to keep their faith in the educational process intact. Such an education must also be relevant to the community. Fort Lincoln children must be able to understand and appreciate the way of life in their own neighborhoods. This is not accomplished by presenting them with materials which glorify the middle-class, white suburban way of life.

The school will be open year round to act as an information and service center for both children and adults. The community will make available continuing and current information as to the nature of its needs and desires regarding the school. It is difficult to specify here exactly what all of these needs and desires will be. However, the use of school facilities for meetings, audiovisual and dramatic presentations, and adult education can be ancitipated.

Ultimately, the school will serve the community by being a part of the community. This kind of close communication between the school and the community as institutions should foster personal, educational linkages involving the school staff, the students, and the community's adult residents. Hopefully, this will enrich and broaden the lives of all concerned. The community will serve the school -- and has indeed been serving it -- by its participation, from the very beginning, in the planning. As the school becomes a reality, this community participation will continue, with community representatives actively involved in the school's governance. The extent of the community's authority and the means by which it is exercised are at the

community's own discretion. In addition, the community will provide the school with resources, human and otherwise, which are capable of enriching the instruction and facilitating the administration. For instance, a large proportion of the school's paraprofessional aides will undoubtedly come from the community. Parents and other residents will serve as school volunteers. The school will also make use of community facilities in the instructional process, for a school should never confine itself with its own walls. One obvious example of such a facility is the National Arboretum. Others might include businesses, institutions, social agencies, and places of entertainment.

How Does It Work?

As we said earlier, this summary attempts to give the flavor of the elementary program rather than a specific blueprint for it. Perhaps, then, the spirit of the system can best be realized by a hypothetical case history...of Mike, let us say, a typical eight year old, Stage III pupil. Some days in a student's career at the school may turn out like microcosms of the whole system; some will unquestionably be too open-ended for many tastes! This "day" in Mike's educational life has not been artificially padded with an impressive array of the system's features; it is simply typical.

Both of Mike's parents work, and so Mike gets to school about 8:30. He has no difficulty getting in, since the school has been open since 7:00 a.m. In the lobby, Mike finds two of his friends watering plants. He stops for a moment to talk with them, then goes up the ramp to the second level. Here he returns a slide projector he had checked out the evening before in order to show his parents pictures of cloud formations. Next he goes to a weather station on the roof, where he records

the temperature and wind direction as part of a science project.

From the roof, Mike goes to his stage. Physically, the stage is a large, carpeted learning area which can accommodate over a hundred children. All the furniture -- even the study carrels -- are mounted on wheels so that it can be moved around and faced in whichever direction seems appropriate. All the internal walls are easily demountable, so the structure of the stage is fluid. It can be broken down into large open areas, small cubbyholes, and points in between. The teachers work as a team. Each member has equal responsibility for the instruction of all the students in the stage.

This morning, Mike is working with Mrs. Johnson on arithmetic. A test he took yesterday (which he corrected and scored himself) shows that he is having trouble with certain spatial concepts. Mrs. Johnson has suggested some exercises and a game for him and demonstrates ways in which he may deal with the concepts. After taking and grading another test, Mike goes over to work with his friend Joe, who has shown a special competence for dealing with spatial relationships.

Mike eats his lunch early today so that he can see a movie being shown in the commons room. It is particularly important that he be on time, as he is operating the projector. This is one in a series of free films, ordered as well as shown by the older children in the school. The program is open to the community.

Back in his stage, Mike goes over his records with his advisor, Mr. Lopez, to check over his record folder and review the results of some diagnostic tests. These tests indicate areas of special competence and interest as well as areas where he needs work. They show where his factual knowledge is strong and where it is weak. The tests also indicate that he prefers working with groups, in which he tends

to take the lead, and that he has good manual dexterity. The conference ends with Mike and Mr. Lopez agreeing that Mike is on schedule and there is no need to change the three-month program which they made, with the help of Mike's parents, a month ago.

One of Mike's optional projects has been a study of the Navajo Indians. He has been corresponding with a Navajo boy in Colorado and has constructed a model Navajo village with several other children. After listening to a dramatic presentation of Navajo history in one of the tape listening carrels, he goes to one of the alcoves, where he practices typing and drafts a story for the school paper.

Mike is a member of the Stage III student committee, and he goes next to a meeting of teachers, assistants, and students to discuss stage operations. Such a meeting could deal with rules, special activities and projects, discipline problems, or even with a physical rearrangement of the stage.

According to his schedule, Mike's school day ends at 2:30. He is free to stay at the school, however, until it closes at 7 p. m. While goofing around on the roof, Mike and several children come across the building engineer working on the air-conditioning unit. Keeping the equipment in order is only part of the engineer's job. He is also expected to explain how it works. At Fort Lincoln, <u>every</u> member of the staff is an instructor, so Mike ends up learning a little applied science even though his school day is officially over.

In summary, we set out to meet modest but, we feel, vital objectives regarding education and community relations. Our discovery that few schools satisfied these objectives caused us to question some of the basic workings of the traditional American public school. Building from the ground up and drawing from as wide an array of experiences as possible, we attempted to put together a functional community

school for the 1970's. In doing so, we held nothing sacred but the twin goals of educational excellence and community relevance. However, we did attempt as much as possible, to use only components that had been tested and found effective elsewhere. An even greater challenge to those two objectives is to create a program for secondary school students (many of whom will have had the benefit of the Fort Lincoln elementary school). That is the subject of the continuation of this summary.

Secondary Program

The central factor in the secondary program is the complete integration of the school with its surrounding community. As the secondary program report puts it:

> "The secondary program design responds to urban conditions -- to the city as a new form; as a new way of American life characterized by a high development of technology, by limited space, and by people dealing with each other in a situation of ever increasing velocity."

The major issues of secondary education in the country today -- program irrelevancy; stereotyped prescriptions imposed on often inaccurate, insensitive, sometimes demeaning student achievement groupings; unresponsiveness to community needs, etc. -- are the conditions that the Fort Lincoln secondary program will have to remediate, especially if children from the elementary school are not to lose the benefits of their experiences there. To meet these needs, the secondary program will have the following basic characteristics:

- The instruction will be individualized
- Students as well as adults will be involved in policy making
- Students will be deeply involved in the day-to-day operation of the school

- Extensive use will be made of physical and human community resources to provide learning experiences
- Students will evaluate themselves, in addition to normal teacher evaluation
- Professional staff hierarchies will not be allowed to form
- The administration will be decentralized
- Student program selections will be based on identified sets of behavioral objectives
- Student placement will be on a nongraded basis
- Required curricula will be held to a minimum, consistent with satisfying Fort Lincoln system accreditation
- Scheduling will be flexible
- The program will embody as much life simulation and career guidance as possible
- Students will be given time and space to explore current issues

Because the secondary program may not be in operation for some years, it is difficult to predict exactly what students (and student characteristics) will initially be confronted. However, that is no reason to plan "in the dark," so, as part of its planning efforts, General Learning conducted a two-day seminar for District of Columbia students and asked them for their candid recommendations. The sessions were lively and the students were articulate and knew what they wanted. In response to their desires and recommendations, the Fort Lincoln secondary program will incorporate the following features:

- Most formal learning activities will be developed at the student's behest. Required work will be limited to mathematics and English.
- Formal grades will be replaced by the evaluation of student performance based on behavioral outcomes largely selected by the students themselves.
- Community people who are uniquely experienced will be conducting many formal teaching activities.
- There will be extensive close counseling for the student's personal and career needs.
- Students will have a formal voice in teacher selection.
- Teachers and students together will evaluate student performance.
- Work experience will be an integral part of all aspects of the curriculum.
- Facilities will be provided for student social and leisure activities.

In effect, then, the Fort Lincoln secondary program will closely follow the design of the elementary plan, though there are some differences of emphasis or degree within the individual components. The individualized instruction needs to be more sophisticated, for instance, since differences in interests and learning achievement tend to widen as students grow older. Furthermore, the selection of instructional materials is freed from the basic skills limitations to which such materials must cater in the elementary grades. Reading, computing, communicating, and processing skills will already be in the secondary student's repertoire.

Finally, the system must be more and more responsive to the students as they become able to take greater responsibility.

The Center Concept

Since the secondary program will not be put into operation for some five years, the problem of exactly how it will be housed can be addressed from a different viewpoint. Unlike the elementary facility (for which architectural plans are complete), specifications are inappropriate at this time for any secondary buildings.

The attributes of the program that have been discussed so far, however, definitely suggest or imply some spatial and organizational concepts. These concepts can be brought to one level of refinement at this time, but they will only be fully rounded out when the rest of the new town is in place.

This is because the secondary program is rooted in the notion of "centers," not necessarily modelled on the shopping center idea of centralized, high-demand businesses, but on the model of the natural convergence of related ideas around those places in the community where such ideas are honored, professed, and put to use.

The idea of a center, then, should be talked about not in terms so much of a place, though there will be places, nor so much in terms of buildings, though buildings of some sort will certainly have to be constructed. When ideas are analyzed, their points or centers of relationship come clear. Especially when conventional high school curricula are analyzed, many natural links between "courses" can be found -- between mathematics and science, for instance, or between history and geography, and such links can be easily related to the surrounding community.

This center concept not only provides a context for organizing skills and data in a more real-world related way (who among us is using mathematics or history in the same manner in which it was taught to us?), but it also encourages the students to deal with professionals in the field, to interact with, manipulate, etc., the artifacts of a trade or the machines of businesses, and to "negotiate and transact" for himself a set of educational experiences useful in either career or college.

As mentioned before, a center should not be thought of as a separate building. In fact, centers may not be in one place at all! The world is not so compartmentalized that related ideas all cluster under a single roof in the community. A single center may be made up of several locations and students may have to shuttle back and forth between centers and parts of centers as they pursue their programs.

At Fort Lincoln, there will be seven main centers:

- Communications
- Fine and Performing Arts
- Science and Health
- Social Environments
- Economics and Business Management
- Engineering and Technology
- Physical Recreation

These centers will be located in the resources areas of the community best suited to the ideas being taught. An insurance company, for instance, might be an ideal location for part of the Economics and Business Management center, the clinic for Science and Health, etc.

Each of the centers will be staffed by a group of professionals, students, paraprofessionals, and community personnel concerned with the program offerings in that center. The centers will also provide instructional resources, opportunities to develop skills in school organization procedures, social and group activities, and forums for addressing issues of concern to youth.

As students proceed through a course, it will be up to the teacher to suggest which of the centers would be most appropriate to the pursuit of certain objectives, and to see that resources and activities useful in realizing those objectives are identified and placed in the correct centers. Thus, a given course might take students to a variety of centers: advertising, for instance, might be studied in the Economics and Business Management center as well as in the Communications center; a course in moral issues might marshall the resources of many centers -- Social Environments, Communications, Economics and Business Management, and Science and Health.

Organization

As in the elementary school, the organization of the secondary program is designed to support the instructional component. The key elements of those earlier recommendations were that all staff relationships should be collegial rather than hierarchical; that the teams should work out among themselves the procedures and practices necessary to fulfill their functions; that leadership should be evolutionary and rotating; that decisions should be made by the people best qualified to make them and at the level closest to instruction as possible; that students should participate in decision making; that curriculum development and evaluation should be a part of

every teacher's function; and that staff members should assume responsibility for their continued professional growth.

There will be four main team structures in the Fort Lincoln secondary program:

- The Student Unit Team
- The Learning Center Team
- The Satellite Team
- The Coordinating Team

The first two teams will directly concern the instructional program while the second two play supporting and governing roles.

Students units will represent the basic organizational structure for students. Approximately 150 students, heterogeneously grouped (age, sex, aptitude, and academic or vocational interests) will comprise a student unit. Each student unit will have a home base in either a learning center or community facility that serves as headquarters. Each unit will be further broken down into groups of 15 students, led by a teacher or an intern or paraprofessional. Approximately five teachers and five interns will make up a unit staff team, since each staff member will be assigned to two 15-student sub-groups. These teams will be responsible for all the policies and operations of that particular unit. The team leader will act as representative to all school-wide bodies.

Each of the centers will have its team, made up of the staff members assigned to it, including teachers, paraprofessionals, volunteers, interns, externs, and community resource instructors. Each center will have a Director who will lead the team in organizing the functions of the center, such as developing course

offerings and locating and recruiting community resource instructors and meeting places for courses that cannot be handled by regular staff members or volunteers.

A Satellite Team will be made up of several support people: an Administrative Coordinator responsible for budgeting, accounting, transportation, etc.; counselors who work with student unit staff members on dealing with the personal and career needs of the students; a community and public relations coordinator who will handle information, visitors, orientation programs, negotiations with the community, etc.; and other secretarial, maintenance, and food services personnel.

Finally, the Coordinating Team, made up of student unit leaders, center Directors, the Administrative Coordinator, the head counselor, and a student from each of the units will function in an experience-sharing, problem-solving capacity. This team will establish any school-wide policies that may be required, deal with any problems arising out of these policies, and maintain liaison with the central office of the school system.

Curriculum

An in the elementary program, these courses will be based totally on performance objectives. There is a variety of sources of such objectives and the number being produced is growing rapidly. Teachers may choose to adopt and use already prepared objectives, to use both prepared and original objectives, or to design courses or units using entirely new objectives.

Since, as was mentioned earlier, many courses and units will stem from student requests, it is reasonable to anticipate that teachers will be asked to develop many objectives themselves. General Learning has provided a six-step model for teachers including:

- Identification of cognitive framework
- Identification of observable behavior
- Organization of the content to be learned according to a "taxonomy"
- Specification of objectives
- Location of appropriate resources
- Design of evaluation tests

Once these objectives are completely developed they may either be clustered into larger units of study or students may pursue them individually. This may occur most often when additional individual interests motivate independent study projects. A student and his advising teacher then will go through the curriculum development process together. Independent study is open to any student in any subject where he has reached the level of problem solving (in other words, when he knows how to get information, interpret it, and perceive causes and effects.) Then the activity keyed to the objective can be located in its appropriate center, given considerations of space, equipment, and student requirements.

If the curriculum of the secondary program is to meet student needs adequately, whatever direction student initiated units or courses take, it will have to achieve several general educational goals. It must help and encourage students to find out what their unique strengths and potentialities are to explore and express themselves. (By the same token, the curriculum must also safeguard those students who know who they are and where they are going from unnecessary soul searching.) The school must offer enough diversity of experience to permit the student-school interaction to work. The diversity of the programs must take many forms and directions. The hours which the school is open will have to be longer and more

adaptable. Programs will be required for working students, pregnant girls, drop-outs, and people especially stimulated by either solitude or groups. Students today are more informed, curious, communal, and honest than ever before; the school must recognize and exploit this youth culture by inviting students to develop the curriculum along with the teachers, to organize a student government adequate to their needs, to seek guidance and expect frankness from all staff members, and to determine for themselves the use of their social centers.

The school must prepare the student who wishes to attend college so that he may meet the entrance requirements. Thus, traditional courses such as English literature, algebra, trigonometry, biology, chemistry, and physics should be available. But the school must also be open to the idea that traditional content can be learned in a variety of other ways and organized in new patterns and relationships that are meaningful to present day students. Thus, work experience and the opportunity to learn vocational skills should be available to all students.

Conclusion

In order to take full advantage of all types of educational experiences provided by an urban environment, the Fort Lincoln secondary plan suggests a school that is innovative in concept and design. The school is not an institution separate from life as it exists in the surrounding community; rather, it is students, staff, and community members interacting and organizing available resources to meet their needs.

A student at Fort Lincoln is encouraged to explore and to develop to the fullest those interests and talents he and his teachers identify. He is asked to participate in school operations, curriculum design, staff evaluation, and extra

curricular activities. Most important of all, he is largely responsible for the decisions that affect him. He has the freedom, mobility, and flexibility to pursue studies ranging from on-the-job experience to small group seminars.

The roles of staff members at Fort Lincoln distinguish them from their counterparts in traditional schools. Teachers are involved in curriculum development, counseling, and identification of materials and resources. Staff roles are differentiated and staff relationships are collegial rather than hierarchical. Having eliminated the role of the principal, the school is operated by a series of teams which evolve as educational and administrative needs arise. These teams will involve students, parents, and community members as well.

Community members are depended upon to serve a variety of functions in the school. They are asked to participate as volunteers, as job counselors, as teachers, and as assistants in development of the curriculum.

Increased communication among all members of the school community will stimulate interest in one another and will create an environment where people are appreciative of and responsive to the needs of others. Whether they are parents, businessmen, students, government employees, teachers, or mechanics, their concern and involvement with Fort Lincoln students will produce a school and a curriculum that are relevant to the current needs of the entire community.

The Community's Role in Total Planning

A comprehensive Community Participation Plan was developed which included a detailed plan for the operation of the educational facilities as well as a series of community education plans or support programs.

The Special Projects Division had the responsibility for supervising the development of the Community Participation Plan and, therefore, worked closely with GLC so that the Fort Lincoln community was well represented during the planning process. All of the organizations having an interest in the planning of community oriented programs were invited to attend a series of nine workshops which were held during July, 1969. Outcomes of the workshops included:

- A detailed plan which offered a number of alternatives for operation of the Fort Lincoln School System.
- An Interim Education Council formed to monitor, plan, implement, and operate phases of the plan until such time as a permanent representative board is elected by the community.
- A series of program suggestions for community education which could be operated in support of the daily school program as well as in support of education for all citizens of the Fort Lincoln community.

These plans, generated by the community, were responsive to the needs of the community, students, teachers, parents, and the school system. The plans are feasible and should be made operational as soon as possible.

2. SYSTEM ORGANIZATION

2.1 Introduction

The Administrative Procedures which may be found in Volume II, Section 3, of the Midterm Report, were developed to serve as a guide to be used by staff to administer the First Facility. They describe such areas as responsibility, authority, information flow, and inputs and outputs required to begin operating the school. Though the procedures were prepared specifically for use in the First Facility, they are sensitive to the operational and organizational needs of the total system.

In order to begin to address the matter of systemwide organization, it is necessary first to go beyond the procedures to a more comprehensive, though certainly less detailed, discussion of the key operational elements of the entire Fort Lincoln education system.

What follows certainly cannot be considered a procedures manual. Rather it is a brief discussion of some of the organizational needs which must be satisfied, with attention paid specifically to broad operational alternatives. Any further development of specifications must await additional information about Fort Lincoln New Town.

When extending the procedures to the total system organization, it will be necessary to employ more staff and to modify procedures, e.g., purchase materials for several schools and provide transportation to and from several elementary schools. Also, new procedures must be added, such as those which will pertain to transporting secondary students to locations outside of Fort Lincoln.

Only certain areas of systemwide organization are addressed here: student registration, student and staff scheduling, student transportation, purchasing and warehousing, and food services. The procedures for other areas, such as accounting, budgeting, and payroll, described in the Midterm Report for the First Facility, will also apply to the comprehensive operation. The ways in which data generated from these activities within specific organizational units must be organized can only be identified after the detailed organization of the comprehensive operation is ascertained. Procedures for certain areas, such as student safety and building maintenance, cannot even be discussed now since they require knowledge of the physical structure and how it is to be utilized.

As planning progresses for the comprehensive Fort Lincoln Schools, it will be possible to identify specific coordinative or administrative positions by title and job description. At this time, however, it must suffice to say that the non-instructional administrative support procedures for the systemwide organization will be the responsibility of someone much like the First Facility Administrative Coordinator and/or Office Manager. In addition, each separate operation will need to be centrally coordinated and managed because of the nature of the education program. This does not say, however, that each of these activities must necessarily be staffed by a highly paid professional. Career ladder opportunities will be numerous. Many activities, such as central store, will be administered by students; there must be maximum student involvement where appropriate. In addition, as stated in the discussion of the administrative procedures, daily management and decision making will be as close as is practical to the level of implementation.

When the nature of the specific operational elements discussed in the remainder of this document were considered, it became possible to conceive of a general system superstructure which would be necessary to administer such a complex operation.

The structure of organizational relationships and broad areas of responsibility flow from the staffing recommendations made for the First Facility and Secondary Program. The operational areas that will require central coordination can now be anticipated, and, therefore, organizational recommendations can be made. It is not known at this time, however, what positions or functions in the First Facility will be replaced when the comprehensive central organization becomes a reality. It is to be expected that the organizational structure for the First Facility and similar operations may change at that time.

The ultimate authority and responsibility for final approval of all issues regarding the entire Fort Lincoln School operation rest with the Educational Project Director (referred to in the Midterm Report as the Director of Special Projects). He functions as the executive of the Fort Lincoln Governing Board, and it is his responsibility to see that the entire project is fulfilling its mission and that all divisions are working together as members of a local team effort.

In attempting to discharge these duties, the Project Director will have three Fort Lincoln staff members reporting directly to him: the Staff Development Coordinator, Administrative Coordinator, and Head Counselor. These Coordinators will have broader roles and greater responsibilities than those described in the Midterm Report for the First Facility. In fact, the Coordinators in the First Facility may be replaced when the need arises to provide systemwide

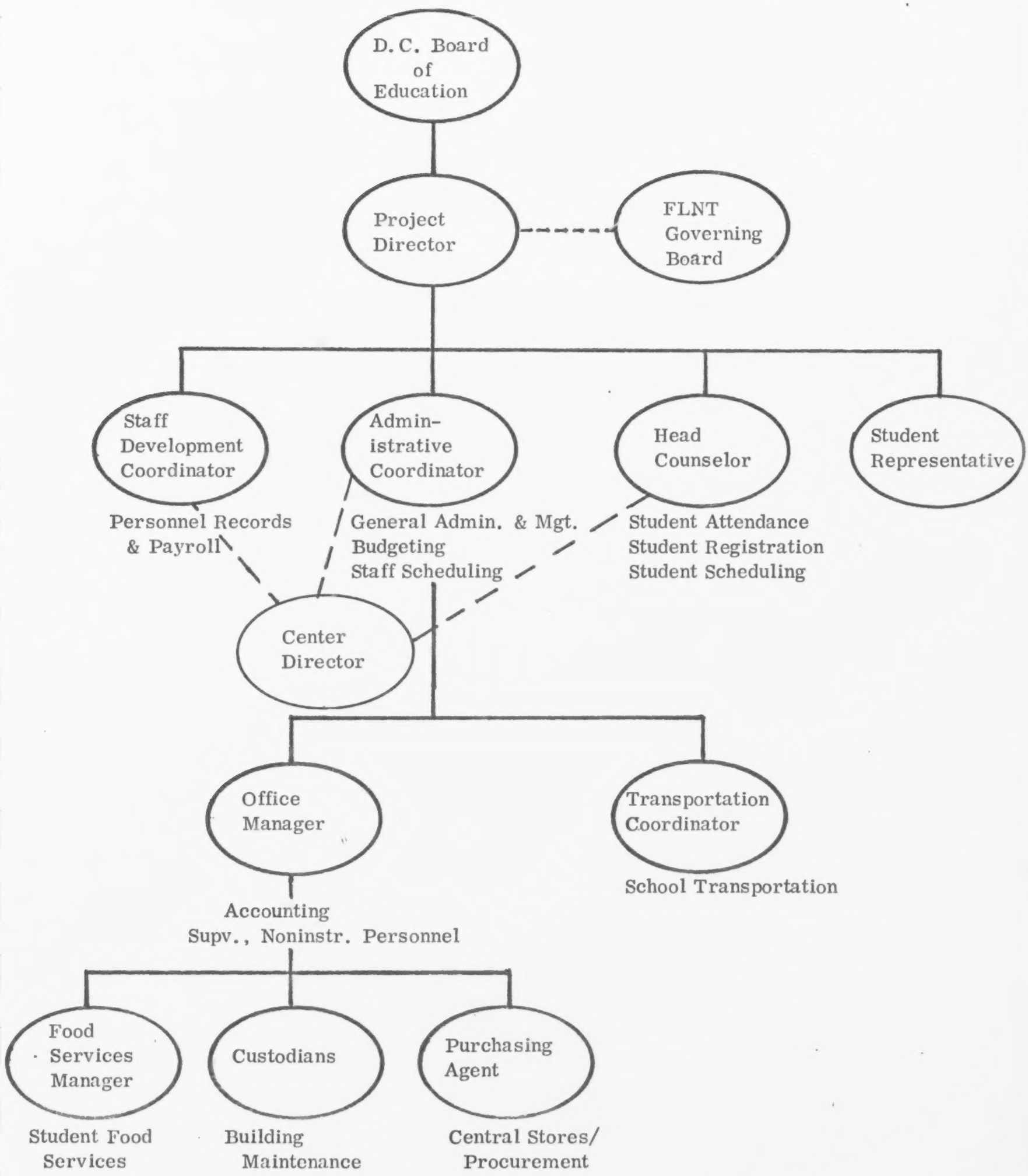
functions. For current planning it is safe to assume that the administrative team structure for the First Facility will be duplicated in each elementary school, and that each of the Coordinators will report to the systemwide Coordinators identified on the organizational chart. In filling various role descriptions at various times, each of the Center Directors will report to different central Coordinators. For example, when the professional growth of a particular teacher within a Center is to be considered, the Center Director will report to the Staff Development Coordinator. In the matter of budget planning policy, the Center Director could report to the Administrative Coordinator.

The transportation supervisor and the Office Manager will report directly to the Administrative Coordinator. The food services manager, custodians, and purchasing personnel will report to the Office Manager.

Following is a broad organization chart which is responsive to both the First Facility and Secondary Program staffing plans and shows the reporting relationships for Fort Lincoln. Again, this is presented as a guide that may be altered considerably by the time the comprehensive program is begun. (The listings outside the ellipses only indicate broad administrative areas of responsibility, identified in the remainder of this section. Complete job descriptions are contained in the First Facility and Secondary Program plans.)

A vehicle is required whereby representatives (administration and students) from all the Fort Lincoln Schools can convene on a team basis similar to the Operating Team for the First Facility and the coordinating team for the Secondary Program. This team, the "Town-Wide Administrative Council," would serve a vital communications and problem-solving function. Its members would be the central

Administrative Coordinator, student representatives (secondary and elementary), Office Manager, Center Directors, and representatives of the elementary school administration(s).



General Organizational Relationships - Fort Lincoln New Town

2.2 Student Registration

This function includes the task of obtaining general background information on each new student, including home address, previous education, present academic status, initial indication of interests and goals, etc. For students previously enrolled in Fort Lincoln Schools, this information will need only to be updated. The procedures for registering elementary students are detailed in the Midterm Report, Section 3.1. Thus registration is a function that will be performed each year in every school. In this discussion, the differences that will be evident in the registration procedures for Fort Lincoln due to the unique nature of the schools will be treated.

The first difference to be noted is that registration in the schools will not be an activity performed by every student at the same time every semester. Because of the emphasis on individualization, registration will tend to take place continually throughout the school year; that is, as each student's goals changes, as new interests are awakened through encounter with educational experiences, he will be given an opportunity to revise his goals and educational program. Furthermore, the updating of information as changes occur can be made part of the on-going activity of learning, diagnosis, counseling, etc.

The only activity that will require extensive processing of large numbers of students will be scheduling or registering for group learning activities. Here recourse can be made to computers, using one of the available school scheduling programs. The output of this program can be made part of the schools' data base to be used in individual scheduling activities as these are required throughout the year.

It is premature at this time to consider the assignment of students to the several elementary schools because there is, as yet, no detailed information available regarding program offerings and the capacities of the different facilities. However, it is recommended that students should not be assigned to elementary schools on the basis of their place of residence. All elementary students, with their parents, should be able to choose the particular facility they wish to attend, where options are available. Transportation is not an issue since the size of the New Town is not great.

The Economics and Business Management Center will provide the technical support for student registration.

2.3 Scheduling (Student and Staff)

A flexible education program will require special procedures to permit student scheduling. Instead of the traditional five or six periods per day, with four "solid subjects" plus one or two options, the system must provide for the changing needs of students as these develop, and enable counselors and students to change the student's schedule as his goals and his perception of those goals change. To provide this kind of rapid, flexible scheduling system, it is recommended that a computer capability be developed and utilized.

The computer system will provide the counselor with an individual schedule on demand. This schedule will be requested after the student, counselor, and parent have discussed the student's goals and reviewed his present academic status, likes and dislikes, etc. The computer system will have the status of current resources available at all times, i.e., facilities, materials, teachers, etc. From this data base, the computer will prepare a suggested schedule incorporating the activities requested by the student with his counselor. The system will also provide the capability of modifying the schedule to reflect new constraints, (e.g., "I don't want to schedule any classes or activities on Fridays.") and new interests, (e.g., "When can I get in on some of the chemistry experiments my friends told me about?").

The system will schedule the entire resources of the Fort Lincoln system, so that a student in one Learning Center may have access to, and knowledge about activities, facilities, and teachers in all of the other Learning Centers. Thus, an individual curriculum will be possible for each student, and his curriculum can incorporate activities, classes, assignments, projects, team activities,

etc. that are indicated by his needs and interests. With the appropriate manipulation of data, it will also be possible to develop continual communications across Centers regarding particular activities that are scheduled in the community and in the schools.

Since the computer, in order to perform the functions described above, must have information concerning the availability of teachers, facilities, materials, etc. in the data base, it should also be used to "schedule" staff. Scheduling is placed in quotation marks because what is really meant is that each teacher will have the freedom to change her schedule as the needs of her students and her personal inclinations may dictate, subject only to nominal review by the members of her team and her team leader. For example, at the beginning of the school year, each teacher will establish her preferences for hours or periods when she wants to have classes, individual tutoring, office hours for students with problems, planning, course preparation, etc. Teaching teams will then review their joint schedules to ensure that proper coverage is being provided to meet the expected student loads. After any required adjustments are made, the initial schedule will be prepared against this "initial resource availability" list. Once the schedule has been approved and students have begun to meet with their teachers, it may be modified to reflect new staff assignments, interests, etc. As these changes become known, a teacher may modify her schedule and receive an output from the computer indicating what, if any, other changes must be made in student schedules, staff schedules, facility availability, etc. Using this information, a teacher and her team can then decide whether to go ahead with the change or revise it in some way to better meet the needs of the students and the teaching team.

The system will not schedule within fixed periods or modules as in "Modular Scheduling." Instead, a completely free system will be used, permitting the counselor and student to request a one-hour period for some activities, 15 minutes for others, and several periods of varying lengths scattered throughout the day for still other activities. In essence, all that the system will need to know is the resources to which the student must have access and for what time period.

The system will produce reports that will enable aides to monitor whether students are present in, or absent from their normal place of work. No attempt will be made to coerce attendance, but, instead, the system will enable maximum responsiveness to student needs. The resources for the scheduling process will be found in the Economics and Business Management Center.

2.4 Student Transportation

The discussion of transportation provisions for students in the First Facility centered on the recognition that there would be no housing in Fort Lincoln for a considerable period of time, and that its students would come from outside the site. It was recommended that transportation not be provided for volunteer students. It was also recommended that transportation be made available to all Stage I and some Stage II students (those normally of pre-kindergarten age).

In considering transportation for the Comprehensive Plan, it is assumed that all students will be residing within the New Town (with a few exceptions). Therefore, there will be no need for extensive school transportation services. It is assumed, however, that any transportation services that are needed will be provided by a self-contained transportation system.

The straightforward need to move students from place to place must be evaluated in light of the educational benefit of a transportation program, i.e., the learning opportunities it may provide. In view of this and the assumptions made above, it is recommended that:

- The principal resource for moving students within the educational complex of the New Town will be the transportation system of the community. (Walking is to be encouraged for its physical benefits.)
- Group transportation to and from school for children who are younger than eight will be supervised by paid community aides on the public system. These individuals will be placed on specific routes at specific times of the day.

- Transportation of groups of students to places outside of the New Town will be provided on either public transportation (under adult supervision) or on vehicles owned or leased by the Fort Lincoln Schools.
- Special transportation will be provided for handicapped students.
- The movement of individual teenagers into the District will be done without supervision (unless unusual conditions require otherwise). The principal aim here is to aid the educational and maturation process rather than to promote economy.
- Preliminary thinking suggests that all special Fort Lincoln New Town transportation vehicles be purchased by the school system (rather than leased). However, the matter should receive formal study by personnel of the Fort Lincoln Schools.
- The cost of transporting Fort Lincoln School students on the internal transportation system should be part of the operating costs of the community.
- Any other transportation system used by the Fort Lincoln Schools — D.C. Schools, public system, etc. — should be reimbursed by the schools according to procedures developed as plans for construction of housing on the site begin to crystallize.

For the first time, a comprehensive transportation budget must be provided for a public school subsystem operating within the geographic boundaries of the District of Columbia. These provisions must be included in the financial plans for operating the total system.

2.5 Purchasing and Warehousing

The administrative procedures for the First Facility specified a purchasing and inventory system which would permit staff and student purchasing to be decentralized. The system was designed to allow rapid acquisition of materials, where desirable, through direct purchase. At the same time, however, the system was also designed to be compatible with, and phase into the D. C. School procurement system. Provisions were made, where it appeared appropriate, to allow students to make direct purchases, or at least complete purchase orders which would be routed through the system.

There are two feasible alternatives for operating the purchasing and warehousing functions of the total Fort Lincoln New Town education program.

The first is simply to extend the procedures recommended in the Midterm Report, Section 3.9, for the First Facility, in which case several modifications would have to be introduced into the system. It would be necessary to provide one large central storage area to satisfy individual requests as well as the needs of smaller storage areas located in each of the Centers. Accurate and frequent information would be required regarding the location of specific equipment in order that heavy or expensive items could be shared. Personnel in the central storage area would be needed to receive and ship supplies and to receive and fill requests. There would be little difference between this system and the central stores system provided within the D. C. Schools, except that this system would operate on a much smaller scale.

The second option would also use a central storage facility. The basic difference would be in the method of procurement and record keeping.

Purchasing would be done completely independent of the D. C. Schools. It would be conducted through the central store; teachers and students could be given "script" with which to make purchases through the store. Upon presentation of the script and the order, the store would either supply or secure the item, or suggest that it be purchased elsewhere. In either case, the vendor supplying the goods (the store or a private establishment) would be reimbursed in cash by the Fort Lincoln Schools. Proper recording of purchases and evaluation would encourage adherence to program budgets.

An immediate benefit to be derived from this approach would be the significant reduction in paper work. In addition, this system allows the user to purchase materials directly using a negotiable instrument, rather than having to follow the usual complex routing of requisitions and purchase orders. There is also the benefit of direct involvement of students in the purchasing process -- a worthwhile educational activity.

The Fort Lincoln School store should be located within the Economics and Business Management Center, providing support to the Center Concept while making learning and training opportunities available to students. The use of students to staff the store could reduce operating costs significantly yet not affect the quality of service offered.

2.6 Food Services

Food services for children and adults within the Fort Lincoln Schools can be provided in several different ways when the complete self-contained community is a reality.

It will not be difficult to meet the needs of the First Facility for these services. In order to provide a comprehensive set of options at almost any time during the day to people centered principally in one well-defined area, there will be a central preparation area with snack areas dispersed throughout the facility. Food will be principally frozen and prepared by rapid cooking processes. Such services can be provided to other elementary schools, using the preparation facilities of the First Facility as a central resource.

There seems to be greater operational constraints when the needs of secondary students are considered. Students and adults will be moving continuously from area to area and outside the community over at least a 12-hour period, and the number of people to be served will be significantly greater than in the First Facility. With these factors of numbers and location in mind, its recommended that the consumer be brought to the food, rather than bringing the food to the consumer. With this criteria as a guideline, two alternatives should be considered:

- Provide services principally through school operated and maintained facilities, such as a large central cafeteria. This can be accomplished in two ways: provide a facility for secondary students only, utilizing the planned preparation area of the First Facility for distribution of food to the remainder of the elementary

schools; or, expand the planned First Facility area into a central facility for the entire school program. These alternatives minimize the need for special preparation facilities throughout the Centers while providing the opportunity for students to gather in social situations. Some disadvantages of this alternative are the need for extensive adult supervision and potential traffic congestion.

- Do not provide any special large preparation area or gathering place for older children who could use private commercial establishments wherever they may be during the day. The potential educational benefits are apparent. Control of food quality and types of meals consumed by children could be achieved by requiring them to eat at places of their choice selected from a list of approved establishments. The formalization of the approval would permit students to be reimbursed for money they spend on food during the day, perhaps after presenting some kind of receipt to the school. Meal prices would be fixed for certain items after negotiation with the commercial establishment which, in turn would be reimbursed from the school system for costs beyond its price to the student.

This approach has the advantage of minimizing the costs of a special building, equipment, supervision,

staffing, and management. It fosters community-school involvement, and provides educational experiences for students as they travel through town.

Providing meals, however, does not eliminate the need for snack areas throughout the facilities for student and adult use during the day. In addition, the First Facility food preparation area must be available for mass preparation of food for both school and community events.

3. THE MASTER PLAN

The Master Plan for the Fort Lincoln Comprehensive Education Plan is based on enrollment estimates provided in the Urban Renewal Plan for Fort Lincoln. These estimates were computed by applying average school age population figures to the housing program recommended by Logue. Provision has also been made to relieve the current overcrowding of the D. C. Public Schools by making room for students who are in overcrowded schools in the areas surrounding Fort Lincoln.

Phasing the building of all Fort Lincoln schools is related to the development of the Logue housing plan by Sub Area definition. The phasing refers to the sequence in which Fort Lincoln will be developed; it does not indicate the specific years in which development will take place. The sequence of this plan is tabled below:

SUB AREA	DEVELOPMENT SEQUENCE	MASTER PLAN PHASE
D	FIRST	I
C	SECOND	I
B	THIRD	II
A	FOURTH	III
E	LAST	IV

The Master Plan provides the following:

- A recast of enrollment estimates to coincide with the age groups for stages and secondary centers of the Education Plan.
- A facility and site selection plan.
- A conversion of the facility plan to building square foot space requirements.
- Facility cost estimates for buildings, furnishings, and initial equipment.

- Operating costs for the Comprehensive Education Plan.

3.1 Enrollment Projections

The school population estimates from the Urban Renewal Plan for Fort Lincoln are summarized below. School age population estimates are based on a 4-4-4 education system.

	Development Sub Area				
	D	C	B	A	E
Lower: Grades 1-4	330	1093	851	1043	821
Middle: Grades 5-8	153	493	384	470	369
Upper: Grades 9-12	114	373	287	351	278
Total	597	1959	1522	1864	1468

These estimates were recast to the D. C. Public School configuration based on the ratios of school enrollments by grade for 1968. In addition, an estimate of the kindergarten population, not applied in the Logue Plan, was made by applying the ratio of kindergarten enrollments to enrollments in grades 1-4 for the D. C. Public Schools in 1968 to the Logue estimates for grades 1-4.

To complete the total estimate of the school population for the Comprehensive Education Plan (See Table 3-1), it is necessary to estimate the numbers of preschool age children and to consider the overcrowded conditions of D. C. Public Schools in the surrounding area. An estimate of 1,600 preschoolers, ages 3 and 4, has been used, based on the estimate of 4,000 children in the 0-5 age group projected in the Definition Report. This is in line with the estimate of 827 kindergarten children.

The enrollment and building capacities of the following D. C. Public Schools were used to calculate overcrowding in October 1969.

SCHOOL	CAPACITY*	ENROLLMENT	OVERCROWDING
Langdon	738	833	95
Young	1020	1212	192
Browne J.H.S.	1080	1150	70
McKinley S.H.S.	1787	2000	113
Phelps Vocational	612	678	66
			536

The recast of enrollments from the D. C. School grade levels to the stages and secondary school centers is based on historical distribution of the age/grade relationship existing in the D. C. Schools. The recast assumes that the Education Plan for Fort Lincoln will reduce the number of over age students and increase the number of under age students by 50 percent for every grade level.

TOTAL SCHOOL POPULATION BY STAGE/SECONDARY CENTERS

		Development Sub Area					
	Overcrowding	D	C	B	A	E	TOTAL
Stage I		194	641	499	612	481	2427
Stage II	105	149	491	382	468	368	1963
Stage III	94	134	442	345	422	332	1769
Stage IV	88	125	412	320	393	309	1647
Total Elementary	287	602	1986	1546	1895	1490	7806
Secondary Centers	249	189	614	475	581	459	2567
Grand Total	536	791	2600	2021	2476	1949	10373

* Capacity calculated on student/teacher ratio for graded classrooms:
"Old" buildings 30/1
"New" buildings 25/1

Table 3-1

TOTAL SCHOOL POPULATION OF COMPREHENSIVE PLAN

DEVELOPMENT SUB AREAS

	Overcrowding →	D	C	B	A	E	TOTAL	TOTAL
Preschool		128	423	329	403	317	1600	1600
Kindergarten		66	218	170	209	164	827	827
Grades 1-6	287 →	408	1345	1047	1283	1009	5092	5379
Total Elementary	287 →	474	1563	1217	1492	1173	5919	6206
Grades 7-9	70 →	110	357	277	339	267	1350	1420
Grades 10-12	179 →	79	257	198	242	192	968	1147
Total Secondary	249 →	189	614	475	581	459	2318	2567
Total School Population	536 →	791	2600	2021	2476	1949	9837	10373

3.2 Facilities

3.2.1 Facilities Planning

In Report #4, The Secondary Program, a series of educational spaces necessary in each Center is listed, and "communication, individual, education, and social services space" (C. I. E. S. S. S.) for students, faculty, and counselors, distinct from the requirements of each Center, are described. The description of capacities, enrollments, and square footage, as outlined below, takes into consideration additional factors such as phasing and student unit space within the six academic Centers. Since student unit space is provided in each Center, a smaller total area allowance is made for C. I. E. S. S. S. in the actual phasing plan. Provisions are also made for early childhood facilities within some Centers.

The square footage numbers are based on a capacity figure for each Center, plus accommodations for 150 students or a student unit in each Center. The summary of square footage requirements is a gross prediction based on a figure of 100 square feet per student. It must be emphasized that these figures will be approximations until specific architects or planners compile a more responsive list of spaces, activities, and educational groups as the planning continues to evolve and a Secondary Program begins to take shape.

The plans for phasing the elementary schools are based upon a recommendation for individual school enrollment capacities of 1050. It is assumed, for planning purposes, that all the elementary schools will be utilized to the same extent as the First Facility, so that no more than 80 percent of the students enrolled would be present at any one time.

The reconciliation of area recommendations in Reports #3 and #4 with the figures below is based upon agreement between total figures for the entire

educational facility, and not necessarily between learning centers as presented in each plan. In Table 3-2, the square foot estimates on the left were based upon facility performance requirements discussed in Reports #3 and #4. The estimates presented on the right-hand side of the Table are based upon a number of square feet per student required for each complete structure.

3.2.2 Site Selection Phasing

During the initial planning and construction phases of Fort Lincoln, many of the educational facilities will be used for temporary activities until the whole system is in place. The flexible nature of the spaces will accommodate these activities. The Secondary Program describes a number of Centers having particular functions as part of the education program as well as part of the community program. These Centers will not all be built initially. Consequently, both programs and activities in the Centers will be mixed. Below is a description of a phasing sequence for the whole town: Area D and Area C, first phase; Area B, second phase; Area A, third phase; and Area E, fourth and last phase.

First Phase — Areas D & C

Area D is the site for the first elementary facility. The plans have been drawn up, a site selected, and construction is ready to begin as soon as the land is transferred from the Department of Housing and Urban Development. Area C is scheduled for construction concurrently with Area D. Since this Area is to include the town center and the concentration of commercial and community facilities, three Centers and an additional elementary school will be located here. The Fine and Performing Arts Center will be situated in the mainstream of pedestrian traffic in the town. This Center will include a performance hall or two halls of differing capacities as well as a commercially owned and operated movie house, if possible. The art, music and dance studios, the seminar spaces, and the space

TABLE 3-2

SQUARE FOOT SUMMARY OF EDUCATIONAL FACILITIES

Source:	Elementary and Secondary Plans (Reports #3 and #4)	Facility and Site Selection Plan
Item:	Six Elementary and Early Childhood Care Facilities 720,000	Six Elementary and Early Childhood Care Facilities 720,000
	Communications Center and Early Childhood Care 37,750	Communications Center*, Early Childhood Care, and Individual Area 51,000
	Science and Health Center with Early Childhood 27,825	Science and Health Center* and Early Childhood Care 45,000
	Engineering and Technology Center 28,100	Engineering and Technology Center* 56,400
	Fine Arts and Performing Arts Center 42,500	Fine Arts and Performing Arts Center* 62,000
	Social Environments Center with Early Childhood Care 33,875	Social Environments Center* with Early Childhood Care 45,000
	Economics and Business Management Center with Early Childhood Care 36,625	Economics and Business Management Center* with Early Childhood Care 42,000
	C. L. E. S. S. S. 125,000	C. L. E. S. S. S. 70,000
	Early Childhood Care in Housing 20,000	Early Childhood Care in Housing 20,000
	Physical Recreation Centers 97,350	Physical Recreation Centers 97,350
	Total 1,169,025	Total 1,208,750

* Space provided in each Center for Student Unit Teams of 150.

for student activities will be available for other subjects during this first stage of development.

The sciences, requiring special laboratory equipment, should have a more or less permanent location. Consequently, in order to initiate a science program in the first phase, the Science and Health Center should be built. The location for the Center should be in the town center to encourage an interchange between professional people working in the area. The health facilities, accommodating people of all ages, will serve as a dental and medical clinic as well as provide psychiatric service for those who need it. The seminar space will be available for other subjects during the day, and the student work space and carrel area can be used temporarily for other activities until the full complement of students are enrolled.

The Economics and Business Management Center also should be located in the town Center. In this case, however, the required areas will be leased from, and decentralized throughout the existing commercial space. In this way, a healthy mix of students and 'professionals' will be ensured.

The governing agencies of the town will serve to inform the students on town politics. The workshops for developing clerical and computer skills will serve to supply manpower for some of the less professional secretarial and computer-based activities in the commercial area.

Seminar space can be used jointly by businessmen and students. The early childhood facility can educate the children of the parents employed in the town center.

Summary of facilities in Areas C & D:

Area D & C	Capacity	Enrollment	Square Feet
1 Elementary	850	1050	120,000
1 Elementary	850	1050	120,000
Fine Arts & Performing Arts	410	500	41,000
Performance Halls			21,000
Science & Health	350	440	35,000
with Preschool	200	200	10,000
Economics & Business	320	400	32,000
with Preschool	200	200	10,000

Second Phase — Area B

Area B will have an elementary school and the Social Environments Center. The elementary facility will be approximately the same as the other two facilities. The Social Environment Center (which will have been operating in one or all of the Centers existing in Area C) will be located finally in, or adjacent to the high-rise facilities closest to a mini-transit stop. This location will be easily accessible to all parts of the town. The Center will contain planning and model-making studios, and adjacent space should be able to accommodate agencies participating in planning operations. Crafts and home arts activities will be directed toward the resident population as well as toward the early childhood facility within the Center. An outlet for fabricated handicrafts should also be considered.

Seminar rooms for this location should be available to parent groups and agencies within the immediate area for a variety of functions.

Summary of facilities in Area B:

Area B	Capacity	Enrollment	Square Feet
1 Elementary	850	1050	120,000
1 Social Environments Center	350	440	35,000
with Preschool	200	200	10,000

Third Phase — Area A

Area A, which is a larger area than the others, is fairly close to the Federal City College campus. This suggests that it can support two elementary schools and the two Centers that will derive the most benefit from proximity to the College. These two Centers are the Communication Center and the Engineering and Technology Center. The connection of the Communication Center with Federal City is obvious. Many of the resources of the town, the public schools, and the college will be interrelated and within walking distance, and can be shared by students and the entire community. The early childhood care facility in this Center should have some relationship to the College and to the Public Library. The engineering activities, in the Engineering and Technology Center, will also profit from this location because the staff and other resources at Federal City College will be easily accessible. This is true also of the technology activities.

Transportation will be supported in this area by a mini-transit stop and railroad facilities. The professionals in the College who are involved in transportation studies and planning will also provide support.

Summary of facilities in Area A:

Area A	Capacity	Enrollment	Square Feet
1 Elementary	850	1050	120,000
1 Elementary	850	1050	120,000
Communication Center	410	500	41,000
with Preschool	200	200	10,000
Engineering	564	654	56,400

Fourth Phase — Area E

The final phase will include recreational facilities for the entire Fort Lincoln area as well as the sixth elementary school. The outdoor recreational facilities will be located in this area and landscaped appropriately. The indoor facilities will be constructed in a central location in Area E and within easy walking distance of a mini-transit stop. These facilities will not be constructed until the last stage of development because of landscaping problems as well as because of their centralized location. The recreational facilities in the elementary facilities should be adequate prior to this time.

Another concept which must be adhered to in the total plan is the inclusion of day care and early childhood education facilities within the housing units. This should occur in all areas, not only in Area E, and they should occupy leased space in the apartment houses themselves.

The Secondary Plan has provided for student work areas in each Center, in other spaces throughout the Fort Lincoln community, and perhaps even in downtown Washington. The square footage estimates for each Center include allocations for 150 student work areas at 50 square feet per student. Space for 1400 additional student work areas (C. I. E. S. S. S.) should be provided in community areas such as housing units and commercial buildings. These areas should be located throughout the Fort Lincoln community, not just in Area E, and should be phased to keep pace with student enrollment increases. The specifications for these student areas are flexible and some or all of them can probably be leased from available space.

Summary of Area E, Early Childhood Facilities in Fort Lincoln Housing, and Student C. I. E. S. S. S.

Area E	Capacity	Enrollment	Square Feet
1 Elementary	850	1050	120,000
Physical Recreation		2567	97,350

Preschool child care housing throughout Fort Lincoln:

340 children 20,000

C. I. E. S. S. S., social space, and student meeting areas in housing, commercial space, etc.

1400 students @ 50 sq. ft./student 70,000

900 students have been allotted for in Centers

3.2.3 Facility Cost Estimates

Estimates of capital costs for the Fort Lincoln Comprehensive Plan are summarized in Table 3.3. The estimates are based on the building space requirements discussed above and unit construction cost estimates representing the current experience of the D. C. Schools. The cost for each education facility is detailed and summarized for each phase of development. Since no specific yearly time phasing is implied, all costs in this Plan are based on 1969-1970 dollars.

The capitalized items included are the total construction costs of educational facilities, the costs of furnishing the facilities, and the costs of the initial equipment for the facilities. The costs of land, site development, architect's fees, and landscaping are not included in this estimate. Annual rent for education space leased from Fort Lincoln housing and commercial areas has been included in the Plan to account for the total space requirements. The Economics and Business

Learning Center, a portion of the preschool child care, and C. I. E. S. S. S. will utilize Fort Lincoln housing and commercial space.

The following cost factors were used to develop this planning estimate:

Construction Cost:

Educational Facility	$24/sq. ft.
Physical Recreation	$40/sq. ft.
Performance Hall	$45/sq. ft.

Furnishings and Initial Equipment:

Education Facility:	
Elementary	$150/student (enrollment)
Secondary	$300/student (enrollment)
Physical Recreation	$330,000
Performance Hall	$150,000
Annual Rent:	$4/sq. ft.

The figures used for physical recreation and performance hall space are derived from architectual estimates for constructing, furnishing, and equipping these specific facilities.

TABLE 3.3

Phase I — Sub Area C and D

Facility	Capacity	Enrollment	Construction Sq. Ft.	Construction Cost	Equipment Furnishings	Annual Rental
1 Elementary School	850	1,050	120,000	$2,880,000	$157,500	
1 Elementary School	850	1,050	120,000	2,880,000	157,500	
Fine Arts & Performing Arts	410	500	41,000	984,000	150,000	
Performance Halls			21,000	945,000	150,000	
Science & Health	350	440	35,000	840,000	132,000	
Preschool	200	200	10,000	240,000	30,000	
Economics & Business	320	400	32,000		120,000	128,000
Preschool	200	200	10,000		30,000	40,000
C. I. E. S. S. S., social and student meeting areas in housing and commercial space		490*	24,500			98,000
Total Phase I	3,180	3,840	413,500	8,769,000	927,000	266,000

Phase II — Sub Area B

1 Elementary School	850	1,050	120,000	2,880,000	157,500	
Social-Environment Center	350	440	35,000	840,000	132,000	
Preschool	200	200	10,000	240,000	30,000	
C. I. E. S. S. S., social and student meeting areas in housing and commercial space		280*	14,000			56,000
Total Phase II	1,400	1,690	179,000	3,960,000	319,500	56,000 (+ Phase I)

* Not included in total or enrollments — accounted for in other Centers.

Phase III — Sub Area A

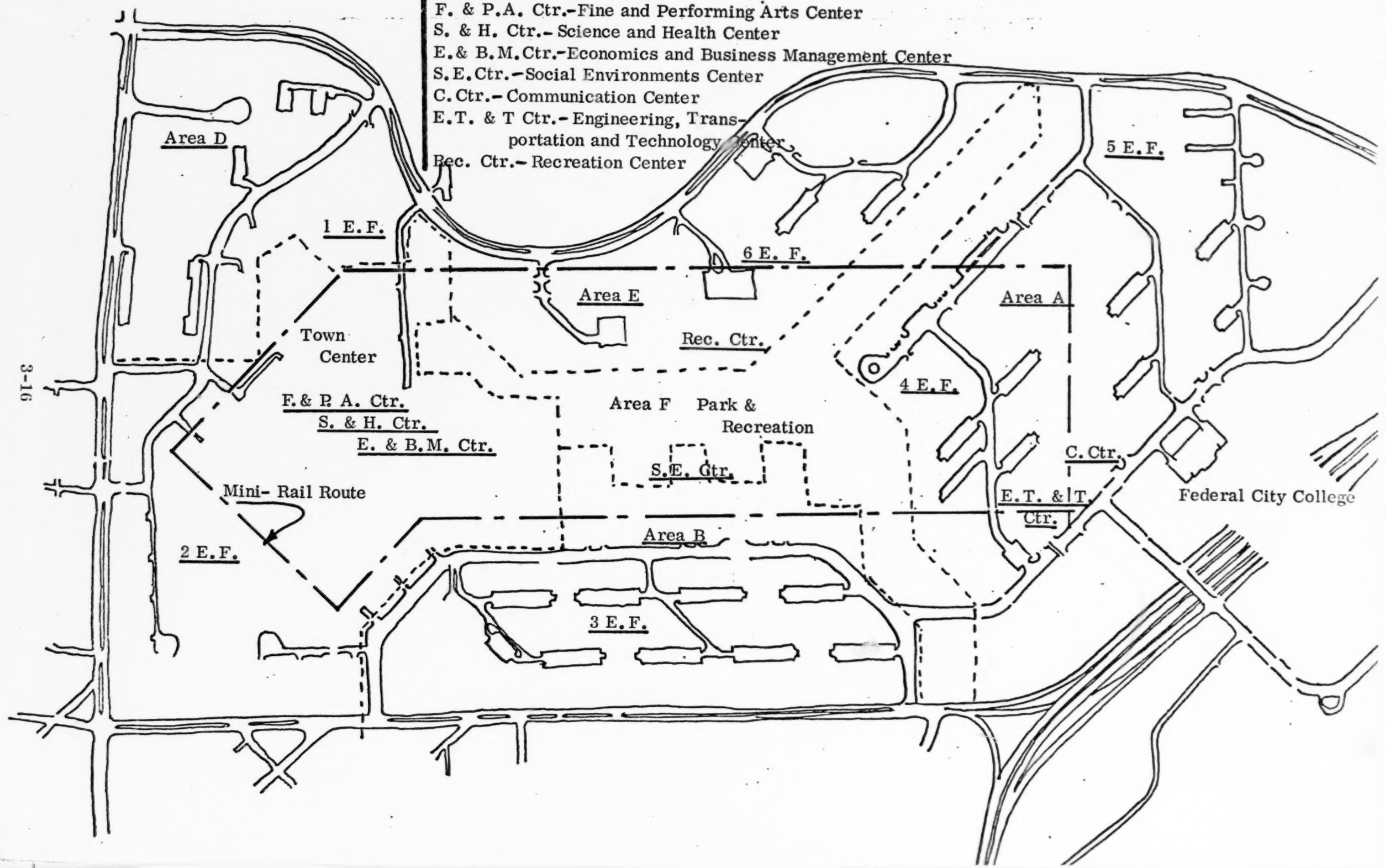
Facility	Capacity	Enrollment	Construction Sq. Ft.	Construction Cost	Equipment & Furnishings	Annual Rental
1 Elementary School	850	1,050	120,000	$2,880,000	$157,500	
1 Elementary School	850	1,050	120,000	2,880,000	157,500	
Communication Center	410	500	41,000	984,000	150,000	
Preschool	200	200	10,000	240,000	30,000	
Engineering and Technology Center	564	654	56,400	1,353,600	196,200	
C. I. E. S. S. S., social and student meeting areas in housing and commercial space		350*	17,500			70,000
Total Phase III	2,874	3,454	364,900	8,337,600	691,200	70,000 (+ Phases I & II)

Phase IV — Sub Area E

1 Elementary School	850	1,050	120,000	2,880,000	157,500	
Physical Recreation		2,567*	97,350	3,894,000	330,000	
Preschool Childcare in FLNT Housing		340	20,000		51,000	80,000
C. I. E. S. S. S., social and student meeting areas in housing and commercial space		280*	14,000			
Total Phase IV	850	1,390	251,350	6,774,000	538,500	80,000 (+ all other Phases)
Total All Phases	8,304	10,374	1,208,750	$27,840,600	$2,476,200	$472,000

* Not included in total or enrollments — accounted for in other Centers.

3.2.4 Fort Lincoln Site Plan



3.3 Operating Costs

Detailed information regarding the design of the First Facility was used to develop a complete operating budget for the first year of operation of that school. In addition to providing estimates of the operating costs of individual elements of the school, the total budget allowed for examining the feasibility of operating the program at $965 per student, the 1969-70 per student operating cost of the D. C. Public Schools.

Gross operating cost estimates for the Comprehensive Plan must also be examined. Certainly the projections cannot be as detailed as those for the First Facility, since much less is known about specific aspects of total daily operation. But, based on several assumptions (to be discussed later), it is possible to project a gross estimate, by phase, of the total staff required to operate the schools. Since the major portion of school operating funds are spent on staff, the ratio of staff costs to total budget is an indicator of the feasibility of operating the entire program.

In the budget for the First Facility it is known that approximately 50 percent of the operating cost is required for salaries. This figure has been used for projecting the operating costs of other Fort Lincoln elementary schools since, for planning purposes, it is assumed that all the elementary schools will have the same education program design. However, it is not expected that the cost for staffing the secondary program will be as low as 50 percent. It may actually be closer to the national pattern of approximately 80 percent of operating budget for total staff, since the staffing ratios are more like those in conventional schools. Therefore, an examination of the portion of the total operating budget devoted to staff for each phase should indicate a figure somewhere between 50 and 80 percent. Because the majority of the projected student population is of elementary school age, the total staff costs

will be closer to 50 than 80 percent.

Estimates can also be made of costs for maintenance and supporting clerical services. After examining all of the figures, it appears realistic to expect that the remaining portion of the operating costs will be quite adequate to manage the school system according to plan, and with a per capita financial level no greater than that of the D.C. Schools.

Costs for the Comprehensive Plan were estimated from an abbreviated version of the automated model used to cost the First Facility. Since the Education Plan will be implemented in four phases to accommodate the growing student population of Fort Lincoln as each construction phase is completed, the total costs incurred will rise as the student population increases from phase to phase. Tables 3.2 and 3.3 are a summary of the costs of the Comprehensive Plan. These phases of planning and implementation depend upon the completion of certain sub area housing developments and increases in resident population. In Tables 3.2 and 3.3, the phases also have sub area designations indicating the particular housing developments to be finished in each phase. These phases, as shown, are not designed to correspond to specific years but rather encompass the First Facility development to the fully implemented Education Plan -- approximately the mid-seventies to 1980.

The number of students was estimated using the Logue Report, the GLC Definition Study, and the planned building schedules of Fort Lincoln. They are, of course, estimates and are adequate for current planning. They may be periodically updated as the development of Fort Lincoln progresses.

The per pupil dollar allotment of $965 was used as the basis for total cost estimates in Table 3.4. This is the same figure used for the First Facility plan,

and it includes all operating costs incurred by the system, particularly personnel, office and classroom equipment, office and classroom supplies and materials, travel by both professionals and students, contracts and consultants, and operations and maintenance. It must be remembered that the per pupil expenditure usually rises each year to include higher prices for equipment and supplies as well as wage increases. These total cost estimates for the phasing cycles were made in constant dollars to be consistent with the other planning done in this report. As planning reaches a more definite stage, these per pupil expenditures will have to be revised to reflect rising costs incurred by the system.

The more realistic picture of total costs incurred for the defined pupil population is depicted in Table 3.5. Here the per pupil expenditure is increased by approximately 8 percent a year to cover increasing prices and wages. The figures reflect the yearly increase taken to 1980.

The total costs for the Comprehensive Plan are planning costs; that is, they indicate the magnitude of resources required as the Fort Lincoln educational system is currently planned. As these plans become better defined and as the development of the Fort Lincoln community takes shape, more detailed costing by the full automated cost model can be performed to provide more refined costs. However, the total costs can be confidently used as a reasonable indication of the total budget necessary to run the schools in the innovative manner dictated by the current Education Plan.

In addition to total cost estimates, staffing costs were computed using the staffing patterns as outlined in the Education Plan.

Cost Summary of Comprehensive Plan
(in 1969 Dollars)

Phase	Number of Pupils By Educational Level			Per Pupil Allotment	Total Cost By Educational Level			Total
	Preschool	Elementary	Secondary		Preschool	Elementary	Secondary	
I Sub Areas D & C	400	2,100	1,340	965	386,000	2,026,500	1,293,100	$3,705,600
II Sub Area B	600	3,150	1,780	965	579,000	3,039,750	1,717,700	5,336,450
III Sub Area A	800	5,250	2,934	965	772,000	5,066,250	2,831,310	8,669,560
IV Sub Area E	1,140	6,300	2,934	965	1,100,100	6,079,500	2,831,310	10,010,910

TABLE 3.4

Cost Summary of Comprehensive Plan
(Calculated Using Increasing Per Pupil Expenditure
of Approximately 8% Per Year)

Phase	Number of Pupils By Educational Level			Per Pupil Allotment	Total Cost By Educational Level			Total
	Preschool	Elementary	Secondary		Preschool	Elementary	Secondary	
I Sub Areas D & C	400	2,100	1,340	1,725	690,000	3,622,500	2,311,500	$6,624,000
II Sub Area B	600	3,150	1,780	1,863	1,117,800	5,868,450	3,316,140	10,302,390
III Sub Area A	800	5,250	2,934	2,012	1,609,600	10,563,000	5,903,208	18,075,808
IV Sub Area E	1,140	6,300	2,934	2,173	2,477,220	13,689,900	6,375,582	22,542,702

TABLE 3.5

Again the costs were calculated in two ways as illustrated in Tables 3.6 and 3.7. First they were computed using 1969 dollars to be consistent with the First Facility plan and other calculations in the report. Secondly, they were derived using the average 6 percent yearly teacher salary increase taken to 1980 -- the planned completion of the educational facilities at Fort Lincoln.

The personnel allocations were made on the basis of the following charts and the phasing information given in other sections of this report.

Preschool Facilities
Staff

Preschool facilities will be set up with a staff to accommodate 200 children each in various learning centers. Each staff will be composed of:

2 Teachers	1 Level 3
	1 Level 4
2 Paraprofessionals	Level 5

There will be four such locations.

In addition there will be space for another 340 preschools within Fort Lincoln to be supervised by:

3 Teachers	Level 3
3 Teachers	Level 4
3 Paraprofessionals	Level 5

Elementary School
Staffing
Student Population

Stage I	Stage II	Stage III-iV	Total
262 Students	353 Students	435 Students	1,050
3 Teachers Level 3	4 Teachers Level 3	6 Teachers Level 3	13
3 Teachers Level 4	5 Teachers Level 4	6 Teachers Level 4	14
5 Teachers Level 5	6 Teachers Level 5	6 Teachers Level 5	17

Administration

7 Level 3 positions

3 Level 5 positions

Secondary Plan
Student and Staffing
(by Phase)

Phase I

Fine and Performing Arts	500 Students
Science and Health	440 Students
Economics and Business Management	400 Students
	1340 Total

Staff for Centers		System Coordination Staff
3 Center Directors	Level 3	
45 Teachers	22 Level 3	
	23 Level 4	
34 Paraprofessionals	Level 5	
15 Interns	Level 6	
		6 Clerical Level 5

Phase II

Social Environments = 440 Students

Staff

1 Center Director	Level 3	
15 Teachers	7 Level 3	
	8 Level 4	
11 Paraprofessionals	Level 5	
5 Interns	Level 6	
		8 Clerical Level 5

Phase III

Communications	500 Students
Engineering and Technology	654 Students

Staff for Centers

2 Center Directors	
25 Teachers	13 Level 3
	12 Level 4
20 Paraprofessionals	Level 5
10 Interns	Level 6

System Coordination

12 Clerical

Phase IV

Physical Recreation

Staff for Centers

1 Center Director
5 Interns

14 Clerical

System Coordination -- Secondary

1 Administrative Coordinator	Level 2
1 Staff Development Coordinator	Level 2
1 Head Counselor	Level 3
1 Office Manager	Level 3
1 Transportation Supervisor	Level 3
1 Food Service Supervisor	Level 3
1 Purchasing Agent	Level 3

Personnel Costs
(1969 Dollars)

Phase	Preschool		Elementary		Secondary		Community Cost	Total
	Staff	Cost	Staff	Cost	Staff	Cost		
I	8	66,440	108	988,800	108	862,900	575,442	$2,493,582
II	12	99,660	162	1,483,200	142	1,124,580	819,834	3,527,214
III	16	132,880	270	2,472,000	203	1,588,320	1,265,580	5,458,780
IV	25	214,960	324	2,966,400	211	1,626,240	1,449,900	6,257,500

TABLE 3.6

Personnel Costs
(Salary Increases of 6% Per Year)
Taken to 1980

Phase	Preschool		Elementary		Secondary		Community	Total
	No.	Cost	No.	Cost	No.	Cost	Cost	
I	8	99,900	108	1,433,910	108	1,297,457	849,380	$3,680,647
II	12	158,838	162	2,363,910	142	1,792,345	1,294,527	5,609,620
III	16	224,500	270	4,176,460	203	2,683,447	2,125,322	9,209,729
IV	25	384,984	324	5,312,196	211	2,912,248	2,582,828	11,192,256

TABLE 3.7

In addition, costs by phase can be seen by referring to Tables 3.8 and 3.9 which illustrate the staffing by facility or center and the totals for each.

At stated previously, these costs are based on the staffing patterns set down in the Education Plan. In addition, a cost for community and student aides has been calculated using 30 percent of total personnel costs as a guideline. This is consistent with the allocations in the First Facility Plan.

It should also be noted that the administrative staff for the secondary learning centers were all to be included in the first phase of implementation. As the succeeding phases are completed the staff would be assigned in a different manner and more clerical help would be added.

Personnel Costs[1]
Comprehensive Plan
(By Phase)
1969 Dollars

Phase I

Preschool 2 Facilities	No. of Staff	Cost	
Level 3	2	25,400	
Level 4	2	17,600	
Level 5	4	23,440	
		$66,440	
Elementary 2 Schools			
Level 3	40	508,000	
Level 4	28	246,400	
Level 5	40	234,400	
		$988,800	
Secondary 3 Centers			
Level 2	2	30,000	
Level 3	28	355,600	
Level 4	23	202,400	
Level 5	40	234,400	
Level 6	15	40,500	
		$862,900	
Community		575,442	$2,493,582 Total

[1]Costs reflected in this table refer to compensation and benefits paid administrative, instructional and support staff of the Fort Lincoln Comprehensive Education System.

TABLE 3.8

Phase II

Preschool 1 Facility	No. of Staff	Cost	Cost of On-Going Program No. Staff	Cost	Total
Level 3	1	12,700	2		
Level 4	1	8,800	2		
Level 5	2	11,720	4		
		33,270		66,440	$99,660
Elementary 1 School					
Level 3	20	254,000	40		
Level 4	14	123,200	28		
Level 5	20	117,200	40		
		494,400		988,800	$1,483,200
Secondary 1 Center					
Level 2			2		
Level 3	8	101,600	28		
Level 4	8	70,400	23		
Level 5	13	76,180	40		
Level 6	5	13,500	15		
		261,680		862,900	1,124,580
Community					819,834
					$3,527,214

Phase III

Preschool 1 Facility					
Level 3	1	12,700	3		
Level 4	1	8,800	3		
Level 5	2	11,720	6		
		33,220		99,660	$132,880

Phase III - cont.

	No. of Staff	Cost	Cost of On-Going Program No. Staff	Cost	Total
Elementary 2 Schools					
Level 3	40		60		
Level 4	28		42		
Level 5	40		60		
		$988,800		1,483,200	$2,472,000
Secondary 2 Centers					
Level 2			2		
Level 3	15	$190,500	36		
Level 4	12	105,600	31		
Level 5	24	140,640	53		
Level 6	10	27,000	20		
		$463,740		1,124,580	1,588,320
Community					1,265,580
					$5,458,780

Phase IV

Preschool (340 students dispersed throughout Fort Lincoln					
Level 3	3	$38,100	4		
Level 4	3	26,400	4		
Level 5	3	17,580	8		
		$82,080		132,880	$214,960
Elementary 1 School					
Level 3	20		100		
Level 4	14		70		
Level 5	20		100		
		$494,400		2,472,000	2,966,400

Phase IV - cont.

Secondary 1 Center	No. of Staff	Cost	Cost of On-Going Program No. Staff	Cost	Total
Level 2			2		
Level 3	1	127,000	51		
Level 4			43		
Level 5	2	11,720	77		
Level 6	5	13,500	30		
		37,920		1,588,320	$1,626,240
Community					1,449,900
					$6,257,500

Personnel Costs
Comprehensive Plan
(By Phase)
With 6% Wage Increases Per Year

Phase I

Preschool	No. of Staff	Cost	2 Preschool Facilities
Level 2			
Level 3	2	$38,192	
Level 4	2	26,464	
Level 5	4	35,244	
Level 6			
	8	$99,900	
Elementary			**2 Elementary Schools**
Level 2			
Level 3	40	$763,840	
Level 4	28	370,496	
Level 5	34	299,574	
Level 6			
	102	$1,433,910	
Secondary			**3 Learning Centers**
Level 2	2	$45,108	
Level 3	28	534,688	
Level 4	23	304,336	
Level 5	40	352,440	
Level 6	15	60,885	
	108	$1,297,457[1]	
Community and Student Aides		849,380[2]	
TOTAL		$3,680,647	

[1]Includes administrative staff for system coordination.

[2]Personnel costs for the community program and student aides was estimated to be 30% of total personnel costs. This is consistent with the First Facility cost model.

TABLE 3.9

Phase II			Cost for On-Going Program		
Preschool	No. of Staff	Cost	No. Staff	Cost	Total
1 Preschool Facility					
Level 3	1	20,241	2	40,482	
Level 4	1	14,025	2	28,050	
Level 5	2	18,680	4	37,360	
	4	52,946		105,892	$ 158,838
Elementary					
1 Elementary School					
Level 3	20	404,820	40	809,640	
Level 4	14	196,350	28	392,700	
Level 5	20	186,800	40	373,600	
	54	787,970		1,575,940	$2,363,910
Secondary					
Level 2			2	47,814	
Level 3	8	161,928	28	566,748	
Level 4	8	112,200	23	322,575	
Level 5	13	121,420	40	373,600	
Level 6	5	21,515	15	64,545	
		417,063		1,375,282	$1,792,345
Community					1,294,527
TOTAL					$5,609,620

Phase III					
Preschool					
1 Preschool Facility					
Level 3	1	21,457	3	64,371	
Level 4	1	14,868	3	44,604	
Level 5	2	19,800	6	59,400	
		56,125		168,375	$224,500
Elementary					
2 Schools					
Level 3	40	858,280	60	1,287,420	
Level 4	28	416,304	42	624,456	
Level 5	40	396,000	60	594,000	
		1,670,584		2,505,876	$4,176,460

			Cost for On-Going Program		
Phase III					
Secondary 2 Centers	No. of Staff	Cost	No. Staff	Cost	Total
Level 2			2	$ 50,686	
Level 3	15	321,855	36	772,452	
Level 4	12	178,416	31	460,908	
Level 5	24	237,600	53	524,700	
Level 6	10	45,610	20	91,220	
		783,481		$1,899,966	$2,683,447
Community					2,125,322
TOTAL					$9,209,729
Phase IV					
Preschool (340 children)					
Level 3	3	68,229	4	$90,972	
Level 4	3	47,277	4	63,036	
Level 5	3	31,482	8	83,952	
		146,988		$237,960	$384,984
Elementary 1 School					
Level 3	20	454,860	100	$2,274,300	
Level 4	14	220,626	70	1,103,130	
Level 5	20	209,880	100	1,049,400	
		885,366		$4,426,830	$5,312,196
Secondary					
Level 2			2	$ 53,724	
Level 3	1	22,743	51	1,159,893	
Level 4			43	677,637	
Level 5	2	20,988	77	808,038	
Level 6	5	24,175	30	145,050	
		67,906		$2,844,342	$2,912,248
Community					2,582,828
TOTAL					$11,192,256

4. EVALUATION

4.1 Introduction

Evaluation is an important element of the operation of the comprehensive Fort Lincoln education system. In this section, the process of evaluation will be discussed together with a suggested format and procedures for its implementation. Finally, a sample evaluation study will be described in order to provide a better understanding of the entire process.

Evaluation must serve as the vehicle by which the community, parents, students, administration, and faculty jointly can review progress toward specified goals. Thus, evaluation will help not only to make the education program more meaningful and effective, but also serve to bring about an environment of mutual trust and understanding among all the participants in the Fort Lincoln School System.

This philosophical position has several consequences which will affect the conduct of evaluation. First, evaluation will force all participants to consider the goals and objectives of the education program, and to determine priorities.

A second consequence of this philosophical position is that evaluation will be a vehicle for policy making rather than a narrow, professional technique. In this context, evaluation refers to procedures for assessing progress toward the goals established by a policy-making body to facilitate decision making by that body. This view of evaluation would allow a narrower type of assessment to take place at the same time. For example, if a teacher wishes to compare two different tests in her classroom and to make recommendations on the basis of her findings, she is free to do so. However, this internal, limited, professional assessment procedure should not be confused with evaluation as it is defined here.

Given this view of evaluation, it should be clear that the implementation process will not be the same in the elementary schools and in the high schools. Furthermore, even at the same level, it may take different forms, depending upon the desires of the participants. Thus, it can be expected that the evaluation activities in an elementary school will be very different from those in a high school, due not only to the different age levels, but also to the different goals and concerns of the students, parents, and faculty. Therefore, it is assumed that a policy-making body (mentioned above, and hereafter referred to as the Governing Body) will be constituted in each school.*

* Each Body will have parent, student, community, faculty, and administration representatives. Two alternatives for such governing bodies were described in the Community Participation Plan, Volume 2, of the Midterm Report.

4.2 Evaluation -- What is it?

The initiation of a new and unique education system for the Fort Lincoln community involves many and subtle value judgments about what is educationally desirable and what is practically attainable. As the implementation of the program begins, the following questions will need to be asked continually: "Are we still headed in the right direction?"; "Are we making satisfactory progress toward our objectives?"; "Should we change our objectives based on our experience?". The answers to these questions can and should be based on valid and reliable measurements. Such measurements can serve to guide, modify, and pace the program. They can also be used as the basis for student, parent, community, and staff dialogue. Evaluation, then, is the process of gathering information about specified aspects of the operation of a school so that the progress being made toward meeting objectives can be assessed and consideration can be given to revising the program, modifying objectives, etc. As indicated earlier, this information will be supplied to the Governing Body of each school for decision-making purposes.

The contract between the General Learning Corporation and the D. C. Schools specifies an initial set of goals for the educational system which provided a design framework for the planning effort. Additional goals were formulated as a result of definition studies, community involvement in planning, and further specification of the education program.

These broad goals guided the design or selection of the components which make up the Fort Lincoln system. The same goals provide a framework for determining whether the system is effective.

Below then are categorized statements of goals for the Fort Lincoln School System which provide the initial set of factors to be evaluated when operations begin.

Student Goals

Students display a positive self awareness and an understanding of their role in society.

Students voluntarily pursue personal interests and develop individual talents.

Students display a capability and a desire for continuing their own education program.

Students become exposed to a variety of career alternatives through simulation.

Students so desiring can function in a chosen career upon graduation.

Students demonstrate a functional reading/comprehension level of 10,000 words in the English language.

Students demonstrate knowledge of basic health practices for self care.

Students communicate effectively in the English language.

Students display appropriate computational skills commensurate with daily activities in their social environment.

Students pursue advanced courses in chosen fields, e.g., foreign language, technical and vocational studies.

Students proceed through their formal academic program based on a set of clearly stated performance objectives.

Students rely to a significant extent upon self-instructional materials.

Students select materials and activities that they determine to be of greatest help and interest in their education programs.

Students participate with each other in planning and executing educational projects.

Students choose any instructional objectives above the minimum required by the school at any proficiency level above the minimum set by the school.

Instructional Goals

A personal education plan is developed for each child. The plan is based on his personal characteristics, modes of learning, and personal objectives. The plan is self-paced and continually updated.

The staff, students, and parents collectively plan the education program of each child.

There are long and short-term diagnoses and prescriptions written periodically for every student.

No special classes are held for exceptional students on a regular basis which foster discrimination against these children. Rather, all students follow an individualized instructional program with the aid of a specially trained teacher when necessary.

The dropout rate among secondary students is 50 percent lower than the rate for surrounding (D. C.) secondary schools.

Schools are open and utilized 7:00 a. m. to 7:00 p. m. daily except Sundays for instructional purposes and are used beyond these times by the community.

Parent and Community Goals

Parents participate in the instructional process as resources for teaching and as decision-makers with teachers and children.

Community and students are adequately represented, as outlined in the Community Participation Plan, in policy making decisions of the school. Decisions included are those concerning personnel, administration, community participation, and curriculum materials.

School (students and staff) utilizes institutional and human resources from the immediate and surrounding community in the education program.

Adult education courses are available in accordance with the desires and needs of the community.

Parents have access to and use all instructional records of their child, including diagnostic tests.

The school is open to parents whenever they wish to visit.

Personnel Goals

Temporary employees are paid no later than two weeks after their period of service.

Staff members conduct a self evaluation of their individual performance within the framework of a staff development plan.

Staff evaluation occurs on a continuing rather than periodic basis. (Frequency, probably once a month, and pattern are determined by the team.)

Students, community, and peers are involved in staff evaluation.

A regular pattern of using outside substitutes in the case of teacher absences does not prevail.

Personnel are utilized based upon a differentiated staffing plan, providing a career ladder for each employee.

Professional staff members plan and implement their own staff development program.

Students and community residents participate in the selection of teachers.

Administration Goals

Staff members indicate that the turnaround time for the acquisition of materials either by purchase or from inventory is adequate for their needs.

The budget-making process for the Fort Lincoln Schools reflects input from the community and students.

Clear and up-to-date records are maintained for each student which show his progress in relation to his individual objectives and potential.

Students participate at appropriate levels in the planning and purchase of educational materials.

The entire system operates at a per-capita cost no greater than the cost in the D. C. Schools in any given year.

Staff and students have ready access to materials needed to facilitate the education program at the required time.

Students are represented on committees and other groups concerned with school administration.

4.3 Evaluation Alternatives

Evaluation can be carried out with a variety of formats or alternatives. For example, all evaluation might be performed by a member of the faculty from a particular school or, perhaps, by a district-wide, internal team. The advantage of these alternatives is that the persons doing the evaluation would be familiar with the goals, problems, and program of the Fort Lincoln education system. The disadvantage of both of these formats is that the internal evaluator(s) may lack the required "neutrality" and objectivity because he is part of the system.

Another consideration is the scope of the evaluation to be undertaken. One alternative might call for evaluating student cognitive performance only; another alternative might require studies dealing with affective performance, curriculum effectiveness, facility use, etc. Although the wider scope is usually preferred, it should be noted that it will cost more and require funds that otherwise could be used to improve the education program. In addition to cost, it is not possible to probe, measure, and observe a program to any great extent without interfering in the program itself.

Still another dimension of the evaluation process is the frequency with which evaluation studies are made. They might be done quarterly, annually, or even on a continuing basis. Again, the amount of probing that the system can tolerate without having its performance deteriorate is a real constraint.

Because evaluation is regarded as a critical component of the Fort Lincoln education system, it is recommended that evaluation be carried out on a continuing basis by an outside consulting team, and that it be as comprehensive as possible consistent with effective operation.

Specifically, it is recommended that the Fort Lincoln education system retain an outside consulting team of professional educators to perform evaluation studies. This team, while retained by the central Fort Lincoln system, would work with the policy-making body in each school to carry on the evaluation studies of interest to the school's members and constituency. The consulting team would be retained on a continuing basis and for a minimum period of three years (subject, of course, to acceptable performance). "Continuing" means frequent and continuing contact by the team with the Fort Lincoln Schools; it does NOT mean full-time employment. The evaluation team would serve to define studies and specify measurements. Regular faculty, students, and administrative personnel at each school would then carry out the indicated procedures and measurements so that the consulting team would not be concerned with day-to-day operations. The consulting team would, of course, perform analyses and make recommendations. (It should be noted here that GLC has no self-interest in this consulting contract. GLC would be automatically disqualified because, as the originator of the Fort Lincoln Education Plan, it would hardly be in a position to objectively evaluate its own work. We do feel strongly that the Fort Lincoln design and its embodiment should be evaluated by competent, experienced professionals in conjunction with the community.)

4.4 The Evaluation Process

The process by which evaluation will be carried out in the Fort Lincoln system is shown in Figure 1. A detailed discussion of each step is given below, outlining the roles of the Governing Body, the consulting team, and school personnel.

The first step, which is the most important and most frequently neglected, will be to identify goals and objectives. While the consulting team can make suggestions and apprise the Governing Body of what other schools in the Fort Lincoln community and elsewhere have specified, this step will be the responsibility of the Governing Body.

After the Governing Body has identified goals and objectives, the next step will be to refine these goals so that they will be specific and can be measured. This task will be performed by the consulting team since it requires professional experience, but approval must be obtained from the Governing Body. Having approved the specific objectives, the Governing Body must assign relative values to them. There are two reasons for assigning values: the first is to force recognition of the fact that educational programs are always compromises between what is desirable and what is possible, given the available resources; and, secondly, to improve communication between professionals and laymen by clarifying the laymen's feelings regarding the importance and relevance of various educational objectives.

The next step, performed by the consultant, will be to specify the measuring "instruments" to be used. These instruments may be paper and pencil tests, observations by professionals or clerical personnel, various types of performance tests, etc. In addition to specifying the instrument, the consultant will also recommend an acceptance criterion to be used. For example, if the evaluation study

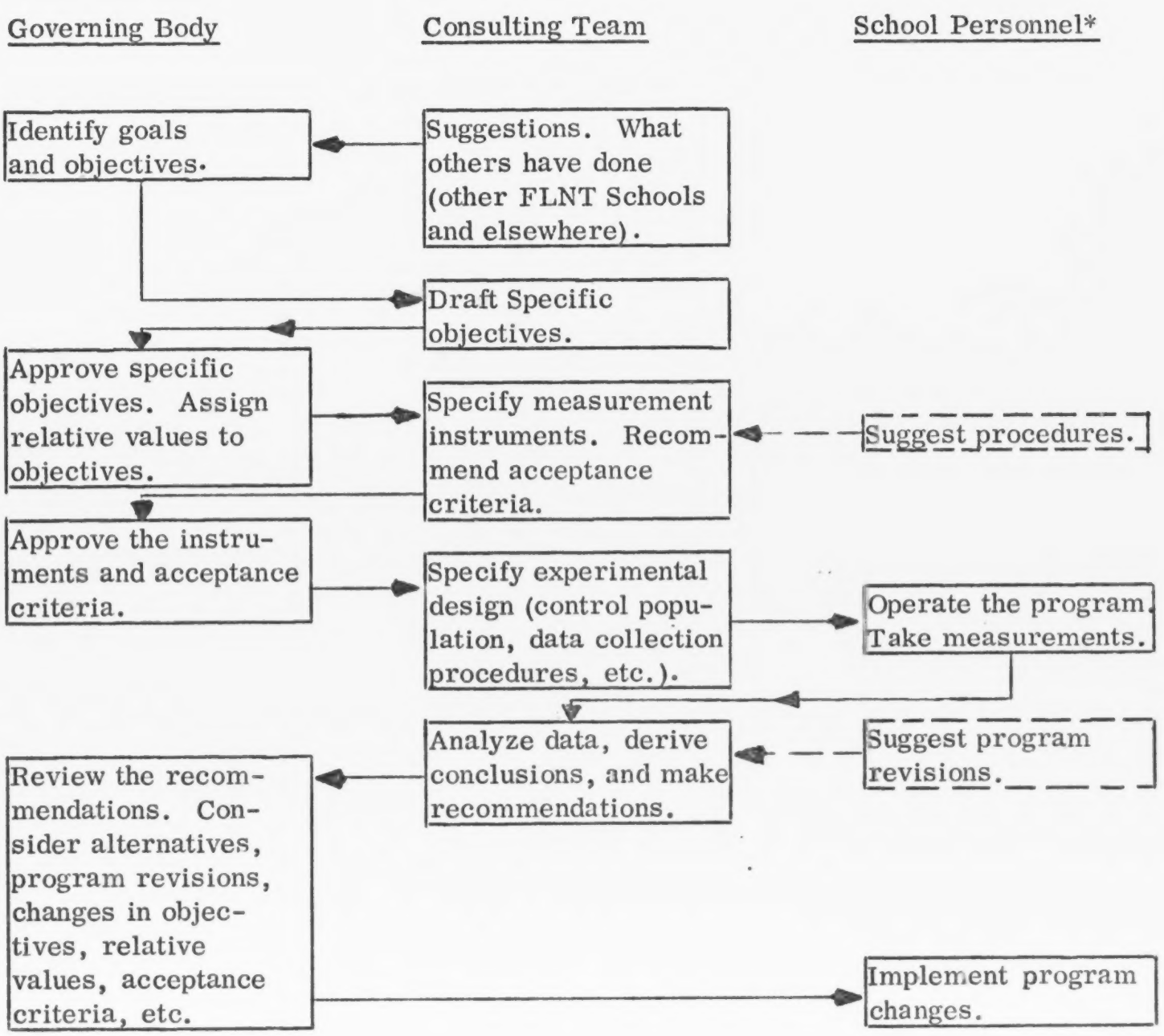

Governing Body
Consulting Team
School Personnel*
Identify goals and objectives.
Suggestions. What others have done (other FLNT Schools and elsewhere).
Draft Specific objectives.
Approve specific objectives. Assign relative values to objectives.
Specify measurement instruments. Recommend acceptance criteria.
Suggest procedures.
Approve the instruments and acceptance criteria.
Specify experimental design (control population, data collection procedures, etc.).
Operate the program. Take measurements.
Analyze data, derive conclusions, and make recommendations.
Suggest program revisions.
Review the recommendations. Consider alternatives, program revisions, changes in objectives, relative values, acceptance criteria, etc.
Implement program changes.

Figure 1 - The Evaluation Process

* May include students, faculty, administration, aides and clerical personnel.

involves the effectiveness of a specific text, then the instrument specified might be a particular set of tests measuring the achievement of students who studied that text. The acceptance criterion might then be: "We will accept this text if 90 percent of those studying it achieve a grade of 90 percent or better on the test." Again, the consultant will perform these two tasks because they require a degree of expertise and knowledge of the various instruments available -- the range of scores considered normal for each instrument, its peculiar deficiencies and strengths, etc. As before, however, the Governing Body must approve both the instruments and acceptance criteria, thus ensuring that they truly reflect the concerns of the group. It should be noted that the consultant will be able to use the school faculty for additional expertise and for suggesting procedures to be used to carry out the required measurements with a minimum of interruption of normal school operations.

The specification of the experimental design will be the next step, i.e., the technical work of deciding on the control population to be used, sampling techniques, data collection procedures, etc. The output of this step will be a set of detailed instructions to be followed by school personnel in carrying out the measurements and operating the program. The consultant will also train aides, students, and teachers to observe, etc. In addition, it will be the responsibility of the consultant to oversee the work of school personnel during the initial stages of data collection and periodically thereafter in order to ensure that the procedures are being followed.

The next step, which will require the consultant to analyze the collected data and make recommendations to the Governing Body, may take place

at the same time that measurements are being taken or after all the data have been collected. In some cases, the analyses will be fairly simple and may involve no more than reporting the raw data in some summary form. In other cases, the consultant may have to rely on sophisticated computer processing of the data or report subtle statistical results to the Governing Body. In preparing his recommendations, the consultant may use suggestions from the school staff for program revisions, changes in objectives, etc.

The final step will be a review by the Governing Body of the consultant's report. The group may request the evaluation to be refined after additional study or data collection, or it may revise the education program to reflect information uncovered by the evaluation study. Still other possibilities include changing objectives, revising the relative values of objectives, altering acceptance criteria, etc. It is also possible that the evaluation study may raise new questions concerning the effectiveness of other portions of the education program, and thus it may be necessary to perform a completely new evaluation study. In any case, the next step will be to return to Step 1 where the process will be repeated (see Figure 1).

It should be noted that more than one evaluation study may be in process at one time. For example, one might be a quick study to determine the relative effectiveness of two alternative facility utilization patterns while another may be a long term, longitudinal study of student performance in reading within a particular curriculum or procedure.

One also should be careful not to assume that the steps described above will always follow one another in strict sequence. More often than not, one step will reveal a need to clarify, revise, or extend the work of a previous step.

4.5 An Example Evaluation Study

To lend specificity to the procedures described above, a "fictional" evaluation study, similar to one that might be carried out in a Fort Lincoln School, is presented.

It is assumed that the Governing Body of the school has identified and approved 35 objectives as being important to the students, parents, faculty, and community of the school. The set of objectives could be classified as follows:

- Student performance
  - Cognitive
  - Affective
  - Social
- Education system performance
  - Staff
  - Curriculum
  - Facility
  - Procedures
- Education system responsiveness
  - To students
  - To parents
  - To the community
  - To staff

There are, on the average, approximately three or four objectives for each category.

Consider now the area of student affective performance. As parents and educators, we are concerned that the school provides our children with the

kinds of experiences that will help each one develop positive concepts about himself, his place in society, and the role of his ethnic culture in the history of the United States. On the other hand, we do not want the school to provide other types of experiences. For example, we do not want our students to be continually anxious about their grades or their performance in school, nor do we want them to be anxious about discipline whether it be too much or too little. While we are confident that the educational design presented for the Fort Lincoln School system will make such a performance possible, we need to be assured that what is possible is actually taking place. Therefore, the Governing Body in our example has approved the following specific behavioral objectives and the concomitant measures and acceptance criteria:

- The self concept of individual students will be improved and maintained during the course of the first year of the Fort Lincoln School operation. The measurement instrument to be used is the Q-Sort Test*. Acceptance criterion will be that 90 percent of students in the school will improve their self concept as measured by this test, and will maintain that improvement.

- Each student will be able to discuss and write a short theme about an important contribution made by a member of his ethnic culture to contemporary or historical American life. The measurement instrument is the criteria established by the students who will be judging the entries. One hundred percent participation by students will constitute the acceptance criterion.

* Stephenson, W., The Study of Behavior, University of Chicago Press, 1953.

- Anxiety levels in the student body as a whole will be maintained at a minimal level throughout the year. The measurement instrument to be used is the STAI (State Trait Anxiety Inventory)*. Acceptance criterion will consist of reducing anxiety in 90 percent of the students tested from the beginning to the end of the year. Furthermore, the anxiety level in the school will be below that in selected control schools.

Having approved the above objectives in this one area, the Governing Body has asked the consultant to see that the required data are collected and analyzed and appropriate recommendations made. (Note that these are only a part of the objectives for which the consultant team will be gathering and analyzing data and preparing conclusions and recommendations.) The consultant prepared a set of detailed instructions at the beginning of the year for use by the school's faculty in collecting these data. For example, each student went through the simple Q-Sort procedure in the Fall to establish his self concept at that time. These data have been collected and will be analyzed at the end of the year when the procedure will be used again to determine how his self concept has changed. Thus the consultant's report for this objective is not expected until the end of the year although he did report to the Governing Body, during one of its regular meetings, that the self concepts of the student body as a whole were not markedly different from profiles of students in other schools that he had studied in the past.

To achieve the second objective, the faculty has already announced a contest with the winning themes to be selected in January. In addition, the staff, with the

*Spielberger, Charles D., Gorsuch, Richard L., and Lushene, Robert E., The State Trait Anxiety Inventory (STAI), to be published by Consulting Psychologists Press.

students' approval, decided to include not only themes but art works, and therefore the students have been busy preparing their entries. The winning entries will be displayed to the community and parents during a school-wide "Open House" early in February. The consultant is not required to prepare any report for this objective.

To achieve the third objective, the consultant has specified a procedure for randomly sampling the student body at frequent intervals and for administering the STAI test (which takes only a few minutes). Clerks in the school have been instructed in the procedure which requires only to select the student, inform his teacher, and have the teacher direct the student to complete the required form and turn it in to the clerk. The consultant gives quarterly reports to the Governing Body on the trends revealed by this evaluation procedure.

It should be emphasized again that the above is only an example. A Fort Lincoln School Governing Body will very likely select other objectives that will better reflect their concerns. Even if the same objectives were selected, the school's evaluation consultant might recommend other measures or test instruments than those mentioned here. Even if both the objective and the instrument were to be the same, the Governing Body might very well select a different acceptance criterion. Thus, the above is only a "scenario" of how an evaluation study might be conducted.

There are some hazards or dangers which should be kept in mind by those who implement the Fort Lincoln education system and the various Governing Bodies. One particular danger that must be guarded against is evaluating only those aspects of the Fort Lincoln system operation that are of concern to professional

educators. It seems to be very easy to get caught up in evaluating materials, staff development, facility, etc., and to forget that the whole purpose of the enterprise concerns the education of children and young adults. The first objective above, to improve students' self concept, is included to remind the implementers of this priority. Still another danger that must be guarded against is evaluation for "evaluation's sake." It is always possible to raise questions the answers to which would be nice to know, and it is always possible to raise more questions than we can possibly do anything about. Therefore, it is recommended that the questions raised for specific evaluation studies be questions that are of real concern to students, parents, staff, and community, that can be acted upon, and that have high "face validity," i.e., they do not require extended explanations to students, community, and parents as to their relevance to the education of the students.